



# STIC Search Report

EIC 1700

STIC Database Tracking Number: 101377

TO: Sin J Lee  
Location: CP3 9B05  
Art Unit : 1752  
August 22, 2003

Case Serial Number: 09/994808

From: John Calve  
Location: EIC 1700  
CP3/4-3D62  
Phone: 308-4139

John.Calve@uspto.gov

## Search Notes

Sin,  
I will be out of the office until Sept. 02.  
In my absence please contact Eric  
Linnell 308-4143 because he is familiar  
with this search.

Joh



# STIC Search Results Feedback Form

**EIC17000**

Questions about the scope or the results of the search? Contact *the EIC searcher or contact:*

Kathleen Fuller, EIC 1700 Team Leader  
308-4290, CP3/4-3D62

## Voluntary Results Feedback Form

➤ I am an examiner in Workgroup:  Example: 1713

➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature  
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to STIC/EIC1700 CP3/4 3D62



Access DB# 101376

## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Sin J. Lee Examiner #: 76060 Date: 8-15-03  
Art Unit: 1752 Phone Number 30 5-0504 Serial Number: 09/994,808  
Mail Box and Bldg/Room Location: 9B05 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Amine Compounds, Resist Compositions & Patterning PrInventors (please provide full names): Hatakeyama, Jun; Kobayashi, Tomohiro;  
Watanabe, Takeru; Nagata, TakeshiEarliest Priority Filing Date: 11-28-01

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search for

the amine compound of Claim #1

15.24

8-15-'03  
94,808

## STAFF USE ONLY

|   | Type of Search           | Vendors and cost where applicable |
|---|--------------------------|-----------------------------------|
| Searcher: <u>J Calve</u>                | NA Sequence (#) _____    | STN <u>✓</u>                      |
| Searcher Phone #: _____                 | AA Sequence (#) <u>2</u> | Dialog _____                      |
| Searcher Location: _____                | Structure (#) <u>✓</u>   | Questel/Orbit _____               |
| Date Searcher Picked Up: <u>8/21/03</u> | Bibliographic _____      | Dr.Link _____                     |
| Date Completed: <u>8/22/03</u>          | Litigation _____         | Lexis/Nexis <u>info</u>           |
| Searcher Prep & Review Time: <u>120</u> | Fulltext _____           | Sequence Systems _____            |
| Clerical Prep Time: _____               | Patent Family _____      | WWW/Internet _____                |
| Online Time: <u>120</u>                 | Other _____              | Other (specify) _____             |

=> file reg

FILE 'REGISTRY' ENTERED AT 17:00:59 ON 21 AUG 2003  
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STRUCTURE FILE UPDATES: 20 AUG 2003 HIGHEST RN 569883-36-9  
DICTIONARY FILE UPDATES: 20 AUG 2003 HIGHEST RN 569883-36-9

=> d his

(FILE 'HOME' ENTERED AT 16:07:04 ON 21 AUG 2003)

FILE 'LREGISTRY' ENTERED AT 16:07:14 ON 21 AUG 2003  
ACTIVATE DELETE/L

L1 STR  
L2 STR L1

FILE 'REGISTRY' ENTERED AT 16:09:15 ON 21 AUG 2003  
L3 SCR 1608 AND 1838 AND 1210 AND 1707  
L4 SCR 1839 OR 2016 OR 2026 OR 1918 OR 1929 OR 2043 OR 1267 OR 170  
L5 1 S L1 AND L3 NOT L4

FILE 'LREGISTRY' ENTERED AT 16:11:17 ON 21 AUG 2003

FILE 'REGISTRY' ENTERED AT 16:12:32 ON 21 AUG 2003  
L6 50 S L2 AND L3 NOT L4  
L7 1038 S L2 AND L3 NOT L4 FULL  
SAVE L7 LEE808/A

FILE 'HCA' ENTERED AT 16:14:36 ON 21 AUG 2003  
L8 951 S L7  
L9 937 S L8 AND 1907-2001/PY,PRY  
L10 72841 S RESIST# OR PHOTORESIST? OR PHOTO(W)RESIST?  
L11 15 S L9 AND L10  
E US20020098443/PN  
L12 1 S E3  
L13 15 S L12 OR L11  
L14 1 S L13 AND L12  
L15 14 S L13 NOT L14

FILE 'LREGISTRY' ENTERED AT 16:20:42 ON 21 AUG 2003

FILE 'HCA' ENTERED AT 16:21:13 ON 21 AUG 2003  
L16 352 S L7/P  
L17 101 S L7/D  
L18 836 S L9 NOT L17  
L19 521 S L18 NOT L16  
L20 3 S L19 AND L10

L21 17388 S PHOTOLITH? OR PHOTO(W)LITH?  
L22 0 S L19 AND L21  
L23 17231 S PHOTOLITH?  
L24 0 S L19 AND L23  
L25 408720 S 74/SX, SC  
L26 24 S L19 AND L25  
L27 435011 S ?LITH?  
L28 25 S L19 AND L27  
L29 347427 S MORPHOL?  
L30 224 S L19 AND L29  
L31 227731 S 27/SX, SC  
L32 272457 S 28/SX, SC  
L33 32074 S MORPHOLINE?  
L34 180 S L19 AND L33  
L35 358 S L19 NOT (L31 OR L32)

FILE 'LCA' ENTERED AT 16:36:34 ON 21 AUG 2003

L36 9 S ACID(2N)GENERAT?  
L37 11 S ACID#####(2N)GENERAT?

FILE 'HCA' ENTERED AT 16:39:43 ON 21 AUG 2003

L38 67279 S AMINE?/TI  
L39 0 S L19 AND L37  
L40 69 S L7(2N)MORPHOLINE?  
L41 223 S L19(2N)MORPHOLIN?  
L42 223 S L19(L)MORPHOLIN?

FILE 'REGISTRY' ENTERED AT 16:43:53 ON 21 AUG 2003

L43 142519 S 8/SZS  
L44 1 S L7 AND L43  
L45 1075381 S 3/SZS  
L46 61 S L7 AND L45  
L47 704407 S 4/SZS  
L48 6 S L7 AND L47

FILE 'HCA' ENTERED AT 16:45:57 ON 21 AUG 2003

L49 1 S L44  
L50 123 S L46  
L51 5 S L48  
L52 6 S L49 OR L51  
L53 6 S L52 AND 1907-2001/PY, PRY  
L54 123 S L50 AND 1907-2001/PY, PRY  
L55 129 S L44 OR L46 OR L51  
L56 0 S L44/P  
L57 29 S L46/P  
L58 2 S L48/P  
L59 0 S L44/D  
L60 59 S L46/D  
L61 1 S L48/D  
L62 51 S L50 NOT (L57 OR L60)  
L63 2 S L51 NOT (L58 OR L61)  
L64 52 S L61 OR L62  
L65 3 S L61 OR L63  
L66 0 S L20 NOT (L14 OR L15)  
L67 3 S L65 NOT (L14 OR L15)  
L68 51 S L62 NOT (L14 OR L15 OR L65)

FILE 'LCA' ENTERED AT 16:54:50 ON 21 AUG 2003

FILE 'REGISTRY' ENTERED AT 16:56:09 ON 21 AUG 2003

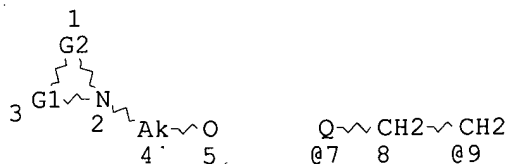
L69 1 S L46 AND 6498-81-3  
L70 60 S L46 NOT L69

FILE 'HCA' ENTERED AT 16:56:30 ON 21 AUG 2003

L71 71 S L69  
L72 61 S L70  
L73 9 S L71 AND L72  
L74 5 S L68 AND L73  
L75 35 S L72 AND L68  
L76 469 S L19 NOT (L57 OR L60 OR L58 OR L61 OR L62 OR L65 OR L69 OR L72  
L77 469 S L76 NOT L71  
L78 22 S L77 AND L25  
L79 447 S L77 NOT L78

FILE 'REGISTRY' ENTERED AT 17:00:59 ON 21 AUG 2003

=> d que stat L7  
L2 STR



REP G1=(1-4) CH2  
REP G2=(0-5) 7-3 9-2  
NODE ATTRIBUTES:  
CONNECT IS E2 RC AT 4  
CONNECT IS E2 RC AT 5  
DEFAULT MLEVEL IS ATOM  
GGCAT IS SAT AT 4  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE  
L3 SCR 1608 AND 1838 AND 1210 AND 1707  
L4 SCR 1839 OR 2016 OR 2026 OR 1918 OR 1929 OR 2043 OR 1267 O  
R 1700 OR 1304  
L7 1038 SEA FILE=REGISTRY SSS FUL L2 AND L3 NOT L4

100.0% PROCESSED 15756 ITERATIONS 1038 ANSWERS  
SEARCH TIME: 00.00.01

=> file hca

FILE 'HCA' ENTERED AT 17:01:31 ON 21 AUG 2003  
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FILE COVERS 1907 - 14 Aug 2003 VOL 139 ISS 8  
FILE LAST UPDATED: 14 Aug 2003 (20030814/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d L14 cbib abs hitind hitstr

L14 ANSWER 1 OF 1 HCA COPYRIGHT 2003 ACS on STN

137:116959 Amine compounds for **resist** compositions and patterning process. Hatakeyama, Jun; Kobayashi, Tomohiro; Watanabe, Takeru; Nagata, Takeshi (Shin-Etsu Chemical Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2002098443 A1 20020725, 32 pp. (English). CODEN: USXXCO. APPLICATION: US 2001-994808 20011128. PRIORITY: JP 2000-362800 20001129.

AB Disclosed are novel amine compds. having a nitrogen-contg. cyclic structure and a hydrating group such as a hydroxy, ether, ester, carbonyl, carbonate group or lactone ring which are useful as basic compds. for use in **resist** compns. for preventing a **resist** film from thinning and also for enhancing the resoln. and focus margin of **resist**. Also disclosed **resist** compns. comprising the inventive amine derivs. as basic compds.

IC ICM G03F007-038

ICS G03F007-38; G03F007-40; G03F007-20; G03F007-30; C07D047-02

NCL 430270100

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST amine compd **photoresist** UV **resist** compd lithog  
photolithog; **photoresist** UV **resist** electron beam amine  
compd lithog

IT **Photoresists**

(UV; amine compds. as basic materials for **resist** compns.)

IT Electron beam **resists**

Photolithography

(amine compds. as basic materials for **resist** compns.)

IT 1199-83-3P 4151-03-5P **13276-24-9P** 20120-24-5P  
**20768-93-8P** **21193-86-2P** 22041-18-5P 22041-19-6P  
22041-21-0P 23573-93-5P **24589-56-8P** 33611-43-7P  
35855-10-8P 54996-29-1P 55643-40-8P 58583-90-7P 60254-45-7P  
62005-12-3P 62260-79-1P 63431-38-9P 67411-59-0P 88217-57-6P  
90727-03-0P 100050-34-8P **167279-38-1P** **300555-03-7P**  
**443795-94-6P** **443795-95-7P** **443795-96-8P**  
443795-97-9P **443795-98-0P** **443795-99-1P**  
**443796-00-7P** **443796-01-8P** 443796-02-9P  
**443796-03-0P** 443796-04-1P 443796-05-2P 443796-06-3P  
443796-07-4P 443796-08-5P 443796-09-6P 443796-10-9P 443796-11-0P  
443796-12-1P 443796-13-2P 443796-14-3P 443796-15-4P  
**443796-16-5P** **443796-17-6P** **443796-18-7P**  
**443796-19-8P** **443796-20-1P** **443796-21-2P**  
**443796-22-3P** **443796-23-4P** 443796-24-5P 443796-25-6P  
443796-26-7P 443796-27-8P

applic-nts.

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(amine compds. as basic materials for **resist** compns.)

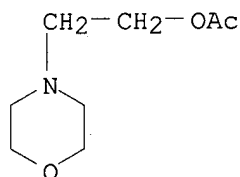
IT 24979-74-6 129674-22-2 158593-28-3 218796-79-3 279243-86-6  
326925-70-6 336620-26-9 443796-28-9 443796-30-3  
RL: TEM (Technical or engineered material use); USES (Uses)  
(amine compds. as basic materials for **resist** compns.)

IT 117458-06-7  
RL: TEM (Technical or engineered material use); USES (Uses)  
(crosslinker; amine compds. as basic materials for **resist** compns.)

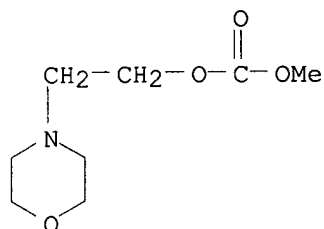
IT 6293-66-9 138529-81-4 144317-44-2 266308-64-9  
RL: TEM (Technical or engineered material use); USES (Uses)  
(photoacid generator; amine compds. as basic materials for **resist** compns.)

IT 13276-24-9P 20768-93-8P 21193-86-2P  
24589-56-8P 167279-38-1P 300555-03-7P  
443795-94-6P 443795-95-7P 443795-96-8P  
443795-98-0P 443795-99-1P 443796-00-7P  
443796-01-8P 443796-03-0P 443796-16-5P  
443796-17-6P 443796-18-7P 443796-19-8P  
443796-20-1P 443796-21-2P 443796-22-3P  
443796-23-4P  
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(amine compds. as basic materials for **resist** compns.)

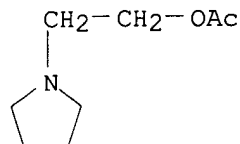
RN 13276-24-9 HCA  
CN 4-Morpholineethanol, acetate (ester) (8CI, 9CI) (CA INDEX NAME)



RN 20768-93-8 HCA  
CN Carbonic acid, methyl 2-(4-morpholinyl)ethyl ester (9CI) (CA INDEX NAME)

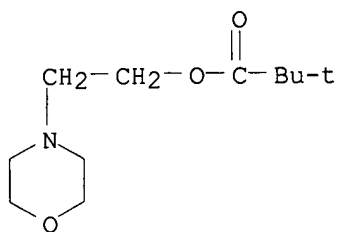


RN 21193-86-2 HCA  
CN 1-Pyrrolidineethanol, acetate (ester) (8CI, 9CI) (CA INDEX NAME)

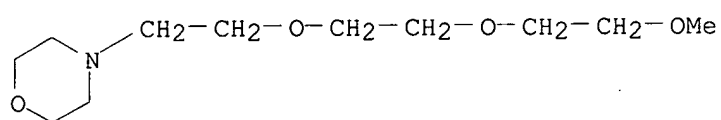




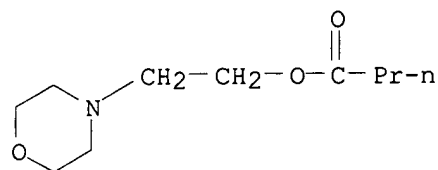
RN 24589-56-8 HCA  
CN Propanoic acid, 2,2-dimethyl-, 2-(4-morpholinyl)ethyl ester (9CI) (CA INDEX NAME)



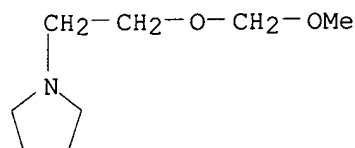
RN 167279-38-1 HCA  
CN Morpholine, 4-[2-[2-(2-methoxyethoxy)ethoxy]ethyl]- (9CI) (CA INDEX NAME)



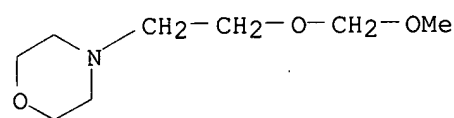
RN 300555-03-7 HCA  
CN Butanoic acid, 2-(4-morpholinyl)ethyl ester (9CI) (CA INDEX NAME)



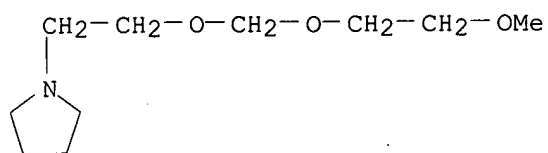
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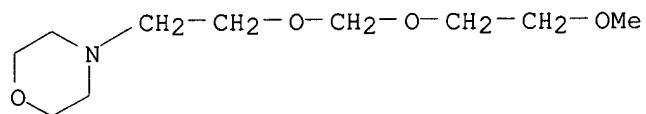
RN 443795-95-7 HCA  
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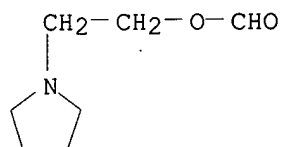
RN 443795-96-8 HCA  
CN Pyrrolidine, 1-[2-[(2-methoxyethoxy)methoxy]ethyl]- (9CI) (CA INDEX NAME)



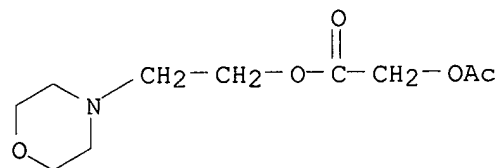
RN 443795-98-0 HCA  
CN Morpholine, 4-[2-[(2-methoxyethoxy)methoxy]ethyl]- (9CI) (CA INDEX NAME)



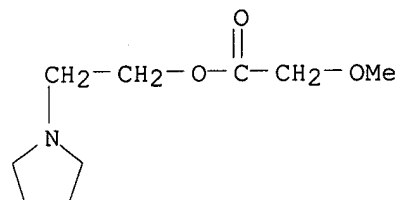
RN 443795-99-1 HCA  
CN 1-Pyrrolidineethanol, formate (ester) (9CI) (CA INDEX NAME)



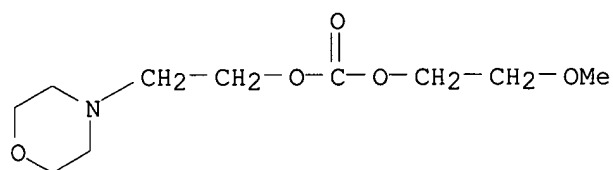
RN 443796-00-7 HCA  
CN Acetic acid, (acetyloxy)-, 2-(4-morpholinyl)ethyl ester (9CI) (CA INDEX NAME)



RN 443796-01-8 HCA  
CN Acetic acid, methoxy-, 2-(1-pyrrolidinyl)ethyl ester (9CI) (CA INDEX NAME)

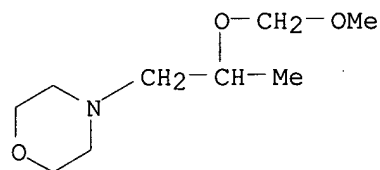


RN 443796-03-0 HCA  
CN Carbonic acid, 2-methoxyethyl 2-(4-morpholinyl)ethyl ester (9CI) (CA INDEX NAME)



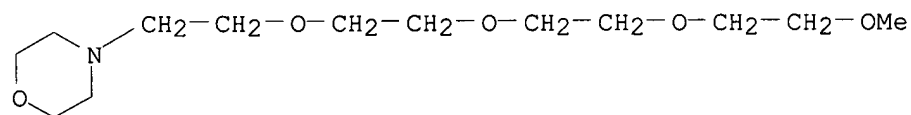
RN 443796-16-5 HCA

CN Morpholine, 4-[2-(methoxymethoxy)propyl]- (9CI) (CA INDEX NAME)



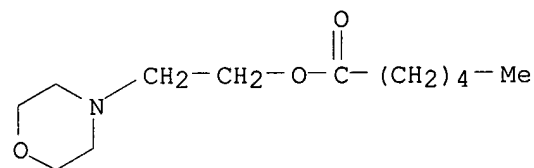
RN 443796-17-6 HCA

CN Morpholine, 4-(3,6,9,12-tetraoxatridec-1-yl)- (9CI) (CA INDEX NAME)



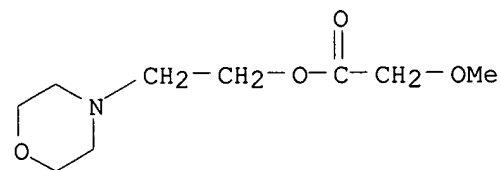
RN 443796-18-7 HCA

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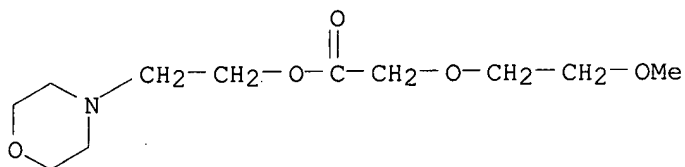
RN 443796-19-8 HCA

CN Acetic acid, methoxy-, 2-(4-morpholinyl)ethyl ester (9CI) (CA INDEX NAME)

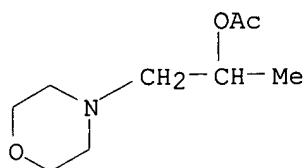


RN 443796-20-1 HCA

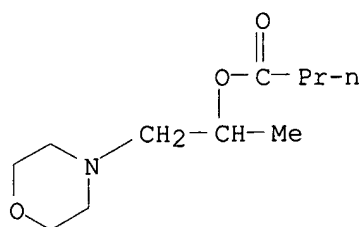
CN Acetic acid, (2-methoxyethoxy)-, 2-(4-morpholinyl)ethyl ester (9CI) (CA INDEX NAME)



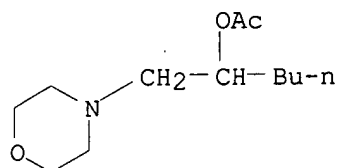
RN 443796-21-2 HCA  
 CN 4-Morpholineethanol, .alpha.-methyl-, acetate (ester) (9CI) (CA INDEX NAME)



RN 443796-22-3 HCA  
 CN Butanoic acid, 1-methyl-2-(4-morpholinyl)ethyl ester (9CI) (CA INDEX NAME)



RN 443796-23-4 HCA  
 CN 4-Morpholineethanol, .alpha.-butyl-, acetate (ester) (9CI) (CA INDEX NAME)



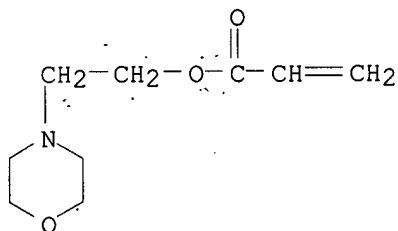
=> d L15 1-14 cbib abs hitind hitstr

L15 ANSWER 1 OF 14 HCA COPYRIGHT 2003 ACS on STN  
 130:88162 Positive-working **photoresist** composition for far-UV exposure. Sato, Kenichiro; Aogo, Toshiaki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10326013 A2 **19981208** Heisei, 38 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-82854 19970401. PRIORITY: JP 1997-75643 19970327.

AB The title compn. comprises (1) a monomer  $H_2C=CR_2AC(:O)OC(OR_2)R_3RT_4$  ( $R_1 = H, Me$ ;  $R_2 = \text{alkyl}$ ;  $R_3, 4 = H, \text{alkyl}$ ;  $A = \text{single bond, alkylene, ether, etc.}$ ), (2) a resin capable of decomp. upon contacting an acid, thereby

increasing soly. in an alk. soln., and (3) a photoacid. This compn. used for a **photoresist** provided a high sensitivity at 170-220 nm and a fine **resist** pattern.

IC ICM G03F007-039  
ICS H01L021-027  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38, 76  
ST **photoresist** compn  
IT **Photoresists**  
(pos.-working **photoresist** compn. for far-UV exposure)  
IT 204009-42-7P  
RL: MOA (Modifier or additive use); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(photoacid; pos.-working **photoresist** compn. for far-UV exposure)  
IT 358-23-6, Trifluoromethanesulfonic anhydride 766-39-2, Dimethylmaleic anhydride  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(pos.-working **photoresist** compn. for far-UV exposure)  
IT 2426-54-2P 4814-74-8P, N-Hydroxymaleimide 18526-07-3P  
**19727-38-9P** 52351-91-4P 218765-18-5P 218765-19-6P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(pos.-working **photoresist** compn. for far-UV exposure)  
IT 218765-20-9P 218765-21-0P 218765-22-1P 218765-23-2P  
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(pos.-working **photoresist** compn. for far-UV exposure)  
IT **19727-38-9P**  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(pos.-working **photoresist** compn. for far-UV exposure)  
RN 19727-38-9 HCA  
CN 2-Propenoic acid, 2-(4-morpholinyl)ethyl ester (9CI) (CA INDEX NAME)



L15 ANSWER 2 OF 14 HCA COPYRIGHT 2003 ACS on STN  
122:278163 Negative **photoresists** containing aminoacrylate salts.  
Aldrich, Paul E.; Manos, Philip; Nader, Allan E. (du Pont de Nemours, E. I., and Co., USA). U.S. US 5399460 A **19950321**, 13 pp.  
(English). CODEN: USXXAM. APPLICATION: US 1991-803311 19911204.  
AB The **photoresists** comprise polyamic acids, which were neutralized with tertiary amines contg. double bonds of the acrylic family, the amines including acrylamines, alkylacrylamines such as for example methacrylamines, ethacrylamines, and the like. The **photoresists** can be used to form relief polyimide structures on elec. devices.  
IC ICM G03C001-73  
NCL 430287000  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other

Reprographic Processes)

Section cross-reference(s): 76

ST **photoresist** aminoacrylate polyimide relief structure; elec device polyimide structure

IT **Resists**

(photo-, aminoacrylates for polyimide structures)

IT 105-16-8P 2867-47-2P **2997-88-8P** 9043-05-4P,  
4,4'-Diaminodiphenyl ether-pyromellitic dianhydride copolymer SRU  
13884-38-3P, N-Butyldiethanolamine dimethacrylate 13884-43-0P,  
Triethanolamine trimethacrylate 13972-49-1P, N-Ethyldiethanolamine  
dimethacrylate 18452-81-8P, N-Methyldiethanolamine dimethacrylate  
25038-81-7P, 4,4'-Diaminodiphenyl ether-pyromellitic dianhydride copolymer  
26873-91-6P 29319-22-0P, 3,3',4,4'-Biphenyl tetracarboxylic  
dianhydride-p-phenylene diamine copolymer 32197-39-0P,  
3,3',4,4'-Biphenyl tetracarboxylic dianhydride-p-phenylene diamine  
copolymer SRU 37857-47-9P 162849-50-5P

RL: POF (Polymer in formulation); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(aminoacrylates for polyimide structures)

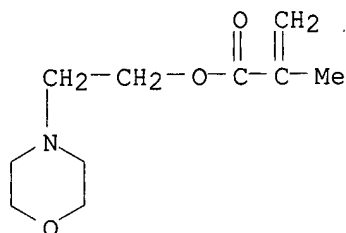
IT **2997-88-8P**

RL: POF (Polymer in formulation); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(aminoacrylates for polyimide structures)

RN 2997-88-8 HCA

CN 2-Propenoic acid, 2-methyl-, 2-(4-morpholinyl)ethyl ester (9CI) (CA INDEX NAME)



L15 ANSWER 3 OF 14 HCA COPYRIGHT 2003 ACS on STN

116:257563 Active radiation-curable resin ink compositions. Suzuki, Yoshiko (Toyo Inki Seizo K. K., Japan). Jpn. Kokai Tokkyo Koho JP 04053805 A2 **19920221** Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-162206 19900620.

AB The title compns., useful for inks or **photoresists** with good mech. and antistatic properties, are manufd. by quaternization of maleic anhydride (I)-C.g.toreq.6 .alpha.-olefin copolymers with unsatd. group-contg. basic compds. Thus, dissolving 7.6 g I-1-octadecene copolymer in 25.9 g MEK, adding dimethylaminoethyl methacrylate 3.4, H2O 0.4, and a photoinitiator (Darocure 1173) 0.11 g, applying this soln. on PET, and irradiating by UV gave coatings with pencil hardness 2H, good resistance against PhMe, and good antistatic properties.

IC ICM C08F008-30

ICS C08F008-14; C08F008-30; C08F008-48; C08F299-00; C09D005-00; C09D123-26

CC 42-12 (Coatings, Inks, and Related Products)

IT 108-31-6DP, Maleic anhydride, polymers with olefins and vinylpyridine  
112-92-5DP, Stearyl alcohol, reaction products with maleic  
anhydride-olefin copolymers, polymers with dimethylaminoethyl methacrylate  
1337-81-1DP, Vinylpyridine, polymers with maleic anhydride-olefin  
copolymer 2439-35-2DP, Dimethylaminoethyl acrylate, polymers with maleic

anhydride-olefin copolymer 2867-47-2DP, Dimethylaminoethyl methacrylate, polymers with maleic anhydride-olefin copolymer 6291-85-6DP, 3-Ethoxypropylamine, reaction products with maleic anhydride-olefin copolymers, polymers **6498-81-3DP**, 2-(1-Aziridinyl)ethyl methacrylate, polymers with maleic anhydride-olefin copolymer 25266-02-8DP, Maleic anhydride-1-octadecene copolymer, reaction products with dimethylaminoethyl methacrylate, polymers

RL: PREP (Preparation)

(prepn. of, photocurable, for thermal-transfer inks)

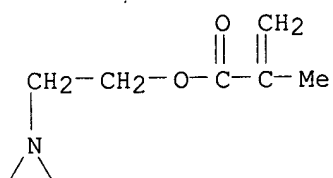
IT **6498-81-3DP**, 2-(1-Aziridinyl)ethyl methacrylate, polymers with maleic anhydride-olefin copolymer

RL: PREP (Preparation)

(prepn. of, photocurable, for thermal-transfer inks)

RN 6498-81-3 HCA

CN 2-Propenoic acid, 2-methyl-, 2-(1-aziridinyl)ethyl ester (9CI) (CA INDEX NAME)



L15 ANSWER 4 OF 14 HCA COPYRIGHT 2003 ACS on STN

116:140152 Photopolymerization process for preparing printing plates and **photoresists**. Zertani, Rudolf; Mohr, Dieter; Matthiessen, Peter (Hoechst A.-G., Germany). Ger. Offen. DE 4013358 A1 **19911031**, 10 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1990-4013358 19900426.

AB Photopolymn. process for prepg. printing plates and **photoresists**. The title photopolymn. process involves irradiating a polymerizable layer contg. a polymer binder, a radical polymerizable ethylenically unsatd. compd. with .gtoreq.1 ethylenically unsatd. end group(s), and a radical polymn. initiator (e.g. metallocene compd.). The imaging material can be irradiated with a visible light (>400 nm) for hardening before, during, or after imagewise-irradn. (heat will release in short time).

IC ICM G03F007-20

ICS G03F007-38; G03F007-032

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **photoresist** photopolymn process metallocene initiator; printing plate photopolymn process

IT **Resists**

(photo-, photopolymn. process for, metallocene compd. in)

IT Polymerization catalysts

(photochem., for **photoresists** and printing plates)

IT 12155-89-4 93709-34-3 97802-84-1

RL: USES (Uses)

(in polymn. process, for **photoresists** and printing plates)

IT 818-61-1D, urethane adduct 822-06-0 3040-44-6D, 1-Piperidineethanol, urethane adduct 19778-85-9 41137-60-4 123735-16-0 124197-96-2

124219-80-3 **139212-09-2**

RL: USES (Uses)

(**photoresist** contg.)

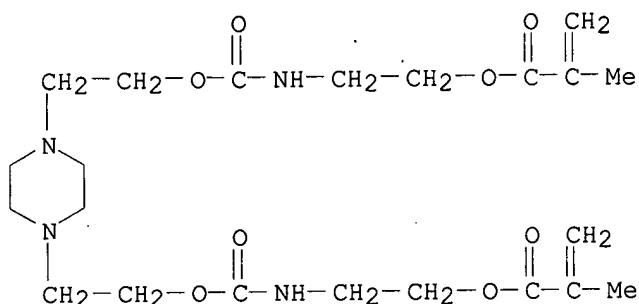
IT **139212-09-2**

RL: USES (Uses)

(**photoresist** contg.)

RN 139212-09-2 HCA

CN 2-Propenoic acid, 2-methyl-, 1,4-piperazinediylbis(2,1-ethanediyloxycarbonylimino-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



L15 ANSWER 5 OF 14 HCA COPYRIGHT 2003 ACS on STN

116:117246 Photopolymerizable composition and recording material produced therefrom. Zertani, Rudolf; Mohr, Dieter; Rode, Klaus (Hoechst A.-G., Germany). Eur. Pat. Appl. EP 447930 A2 **19910925**, 13 pp.  
DESIGNATED STATES: R: AT, CH, DE, DK, ES, FR, GB, IT, LI, NL. (German).  
CODEN: EPXXDW. APPLICATION: EP 1991-103783 19910313. PRIORITY: DE 1990-4008815 19900320.

AB The title material comprises a polymeric binder, a radical polymerizable compd. with .gtoreq.1 polymerizable group and .gtoreq.1 photooxidizable group in the mol., and a photoinitiator, where the photoinitiator is a metallocene. The recording material may be a combination of a binder from methacrylic acid-n-hexyl methacrylate-styrene copolymer with acid value 190, triethylene glycol dimethacrylate monomer, and a photoinitiator from dicyclopentadienylbis(pentafluorophenyltitanium). The material has improved sensitivity and thermal stability. The material can be used for printing plates or **photoresists**.

IC ICM G03F007-032

ICS G03F007-029; G03F007-11; C08F002-50

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST photopolymn initiator metallocene; **photoresist** printing plate  
photopolymn compn

IT **Resists**

(photo-, metallocene photoinitiator-contg. polymerizable compn. for)

IT 102-71-6D, Triethanolamine, reaction product with isocyanatoethyl methacrylate 106-91-2D, reaction product with triethanolamine 822-06-0D, reaction products with hydroxyacrylic compd. and amines 868-77-9D, reaction products with diisocyanates and amines 1484-84-0D, 2-Piperidine ethanol, reaction products with diisocyanates and hydroxyacrylic compds. 3524-68-3 19778-85-9, Trimethylolethane triacrylate 58601-54-0 124197-96-2 **139212-09-2**

RL: USES (Uses)

(photopolymerizable compn. contg., in presence of metallocene photoinitiator)

IT **139212-09-2**

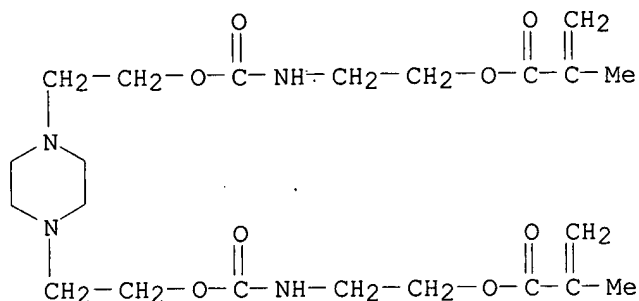
RL: USES (Uses)

(photopolymerizable compn. contg., in presence of metallocene photoinitiator)

RN 139212-09-2 HCA

CN 2-Propenoic acid, 2-methyl-, 1,4-piperazinediylbis(2,1-ethanediyloxycarbonylimino-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

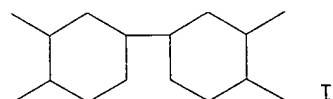




L15 ANSWER 6 OF 14 HCA COPYRIGHT 2003 ACS on STN

114:91975 Photosensitive polyimide precursor composition for **resist** and its use. Sato, Kuniaki; Kojima, Yasunori; Ishimaru, Toshiaki; Hayashi, Nobuyuki; Kikuchi, Noburu; Saito, Takayuki; Kojima, Mitsumasa (Hitachi Chemical Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 02154265 A2 **19900613** Heisei, 15 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1988-308539 19881206.

GI



AB The compn. comprises a polyimide precursor obtained from OCR1(CO2H)2CONHR2NH [R1 = I; R2 = divalent arom. group] and an ethylenically unsatd. group-contg. amine or epoxy or isocyanate or an aziridine compd., and a photopolymn. initiator. The **photoresist** compd. is used by coating a substrate with it to form a photosensitive element. The compn. shows excellent heat resistance and photosensitivity.

IC ICM G03F007-038  
ICS C08F002-46; C08G073-10; C08L079-08; G03F007-004; G03F007-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST polyimide **resist** precursor

IT Polyimides, uses and miscellaneous  
RL: USES (Uses)  
(arom., **photoresist** using, photopolymn. initiator for)

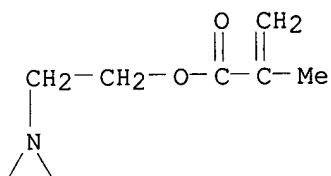
IT **Resists**  
(photo-, polyimides, photopolymn. initiator for)

IT 121-44-8, Triethylamine, uses and miscellaneous 42759-78-4,  
2,6-Bis(4'-azidobenzal)-4-hydroxycyclohexanone 82799-44-8,  
2,4-Diethylthioxanthone 131746-40-2, Ethyl N,N-diethylaminobenzoate  
RL: USES (Uses)  
(photopolymn. initiator, polyimide **resist** compn. contg.)

IT **6498-81-3D**, reaction product with polyamic acid 24991-11-5D,  
reaction products 60283-41-2D, reaction product with polyamic acid  
127538-69-6D, reaction products  
RL: USES (Uses)  
(**photoresist** using)

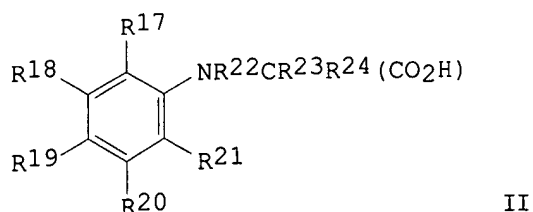
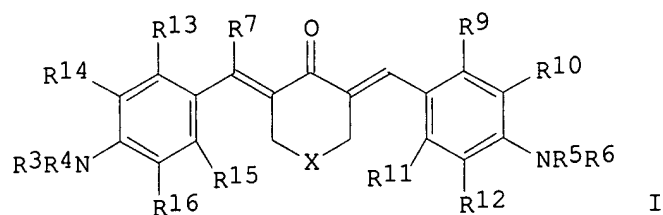
IT 106-91-2, Glycidyl methacrylate  
RL: USES (Uses)

(polyimide **resist** compn. contg.)  
 IT 17831-71-9, Tetraethylene glycol diacrylate  
 RL: USES (Uses)  
 (polyimide **resist** compn. contg., A 4G)  
 IT 64401-02-1  
 RL: USES (Uses)  
 (polyimide **resist** compn. contg., A BPE 10)  
 IT **6498-81-3D**, reaction product with polyamic acid  
 RL: USES (Uses)  
 (**photoresist** using)  
 RN 6498-81-3 HCA  
 CN 2-Propenoic acid, 2-methyl-, 2-(1-aziridiny)ethyl ester (9CI) (CA INDEX NAME)



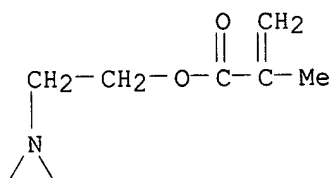
L15 ANSWER 7 OF 14 HCA COPYRIGHT 2003 ACS on STN  
 114:91973 Photosensitive polyimide composition for **resist** and its application in photosensitive element. Sato, Kuniaki; Kojima, Yasunori; Ishimaru, Toshiaki; Hayashi, Nobuyuki; Kaji, Makoto (Hitachi Chemical Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 02154261 A2 **19900613** Heisei, 13 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1988-308540 19881206.

GI



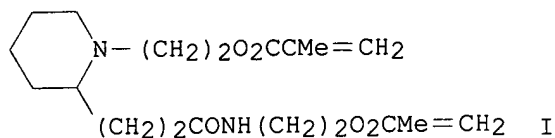
AB The compn. comprises polyimide precursor obtained from OCR1(CO2H)2CONHR2NH (R1 = 4-valent arom. group; R2 = divalent arom. group) and ethylenic unsatd. group-contg. epoxy or aziridine compd., and a photopolymn. initiator contg. aminobenzylidene compd. I [R3-6 = alkyl; R7-8 = H, CN, alkoxy, carbonyl, alkyl, aryl; R9-16 = H, Cl, Br, alkyl, aryl, alkoxy; X = O, S, alkyl, aralkyl, aryl, (aryl-substituted) N], and

- N-aryl-.alpha.-amino acid II (R17-21 = H, CN, alkyl, halo,; R22 = H, alkyl, cycloalkyl, hydroxyalkyl, alkoxyalkyl, aminoalkyl, aryl; R23-24 = H, alkyl). The element consists of laminated above compns. on a substrate. The compn. shows excellent heat resistance and photosensitivity.
- IC ICM G03F007-027  
ICS C08F002-44; C08F002-46; C08G073-10; C08L079-08; G03F007-031; G03F007-038
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST polyimide **resist** photopolymn initiator; aryl amino acid photoinitiator **resist**; benzylidene carbonyl photoinitiator **resist**
- IT Polyimides, uses and miscellaneous  
RL: USES (Uses)  
(arom., **photoresist** using)
- IT **Resists**  
(photo-, polyimides)
- IT Polymerization catalysts  
(photochem., amino compds., for polyimide **photoresists**)
- IT 103-01-5  
RL: USES (Uses)  
(photopolymn. initiator, polyimide **resist** compn. contg.)
- IT 42288-26-6 121370-12-5  
RL: USES (Uses)  
(photopolymn. initiator, polyimide **resist** compn. using)
- IT 24980-39-0D, ethylenic double bond-contg. compd. incorporated  
24991-11-5D, reaction product with double bond -contg. compd.  
RL: USES (Uses)  
(**photoresist** using)
- IT **6498-81-3D**, reaction products with polyamic acid  
RL: USES (Uses)  
(**photoresist** using, amino compd. photopolymn. initiator for)
- IT 4367-02-6P  
RL: PREP (Preparation)  
(prepn. of, photopolymn. initiator, polyimide **resist** compn. using)
- IT **6498-81-3D**, reaction products with polyamic acid  
RL: USES (Uses)  
(**photoresist** using, amino compd. photopolymn. initiator for)
- RN 6498-81-3 HCA
- CN 2-Propenoic acid, 2-methyl-, 2-(1-aziridinyl)ethyl ester (9CI) (CA INDEX NAME)



L15 ANSWER 8 OF 14 HCA COPYRIGHT 2003 ACS on STN  
113:106473 Photopolymerizable mixtures. Zertani, Rudolf; Mohr, Dieter; Rode, Klaus (Hoechst A.-G., Germany). Ger. Offen. DE 3824903 A1  
**19900201**, 11 pp. (German). CODEN: GWXXBX. APPLICATION: DE  
1988-3824903 19880722.

GI



AB Photopolymerizable mixts. for the prodn. of printing plates and **photoresists** having a high photosensitivity and improved storage stability are essentially composed of a polymer binder, an acrylic or alkacrylic acid ester of a polyhydric alc. with .gtoreq.1 urea group and .gtoreq.1 urethane group, a photoreducible dye, a radiation-cleavable trihalomethyl compd., and an acridine or phenazine compd. Thus, a printing plate prepd. from a photopolymerizable compn. contg. hexyl methacrylate-methacrylic acid-styrene copolymer, the monomer I, alc.-sol. eosin, 2,4-bis(trichloromethyl)-6-(4-styrylphenyl)-s-triazine, 9-phenylacridine, and propylene glycol mono-Me ether showed both a high sensitivity and a high storage stability.

IC ICM G03F007-031

ICS C08F002-50; C08F120-36; C08F120-20; G03C001-72

ICA G03F007-16; G03F007-20

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST photopolymerizable mixt printing plate **photoresist**

IT **Resists**

(photo-, photopolymerizable, contg. acrylic copolymers)

IT 602-56-2, 9-Phenylacridine 17372-87-1, Eosin 58601-54-0 97802-84-1,  
2,4-Bis(trichloromethyl)-6-(4-styrylphenyl)-s-triazine 128860-38-8  
128860-39-9 **128860-40-2** 128860-41-3 128860-42-4  
128860-43-5 128860-44-6 128881-32-3 **128881-33-4**

RL: USES (Uses)

(photopolymerizable compn. contg., for printing plate prepn.)

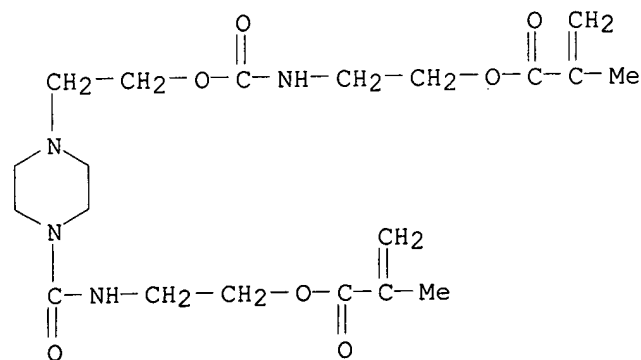
IT **128860-40-2 128881-33-4**

RL: USES (Uses)

(photopolymerizable compn. contg., for printing plate prepn.)

RN 128860-40-2 HCA

CN 2-Propenoic acid, 2-methyl-, 2-[[[4-[2-[[[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]amino]carbonyl]oxy]ethyl]-1-piperazinyl]carbonyl]amino]ethyl ester (9CI) (CA INDEX NAME)



RN 128881-33-4 HCA

CN 2-Propenoic acid, 2-methyl-, 2-[[[4-[3-[[[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]amino]carbonyl]oxy]propyl]-1-



III (R1 = monovalent org. moiety with unsatd. bond). Thus, 4,4'-diaminodiphenyl ether 40, m-cresol 300, and 6,6'-methylenebis(2-methyl-4,3,1-benzoxazin-4-one) 66.4g were stirred 1 h at 100.degree. and 6 h at 180.degree. to obtain a diamine (m.p. 170.degree., amino equiv. 370). The diamine 7.4 g was mixed with 80 g N-methyl-2-pyrrolidone and 3.22 g IV and stirred at 15.degree. for 8 h to obtain a polyquinazoloneimide precursor, which was further treated with 3.1 g III (R1 = CH2:CMeco2CH2CH2) and mixed with 1.1 g V to obtain a photosensitive material. The photosensitive material was applied to a glass sheet, dried, exposed through a mask with UV, and soaked in N-methyl-2-pyrrolidone to obtain a good relief pattern. Sep., the material was spread on a Cu sheet, exposed, and heated 1 h at 200.degree. and 1 h at 350.degree. under N to obtain a cured product which showed dielec. strength 300 kV/mm, dielec. const. 2.8 (1 kHz), resistivity 3 .times. 10<sup>16</sup> .OMEGA., and decompn. temp. 410.degree..

IC ICM G03C001-71

ICS C08L079-04; G03F007-10; H01L021-30

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35

IT **Resists**

(photo-, neg.-working, vinylaziridine-modified polyquinazoloneimide precursors with arom. bisamide crosslinkers as)

IT 89-32-7D, prepolymers with quinazolone-contg. diamines, adducts with unsatd. aziridine derivs. 2421-28-5D, prepolymers with quinazolone-contg. diamines, adducts with unsatd. aziridine derivs. **6498-81-3D**, adducts with polyquinazoloneimide precursors 24936-95-6D, polymers with tetracarboxylic dianhydrides, adducts with unsatd. aziridine derivs. 25103-77-9D, polymers with tetracarboxylic dianhydrides, adducts with unsatd. aziridine derivs. 28263-24-3D, oligomeric, polymers with tetracarboxylic dianhydrides, adducts with unsatd. aziridine derivs. 28759-73-1D, oligomeric, polymers with tetracarboxylic dianhydrides, adducts with unsatd. aziridine derivs. 96182-22-8D, adducts with polyquinazoloneimide precursors 106246-22-4D, polymers with tetracarboxylic dianhydrides, adducts with unsatd. aziridine derivs. 106246-23-5D, polymers with tetracarboxylic dianhydrides, adducts with unsatd. aziridine derivs. 106246-64-4D, polymers with tetracarboxylic dianhydrides, adducts with unsatd. aziridine derivs. 106246-65-5D, polymers with tetracarboxylic dianhydrides, adducts with unsatd. aziridine derivs.

RL: USES (Uses)

(photosensitive compns. contg. bisazide crosslinker and, storage-stable, heat-resistant)

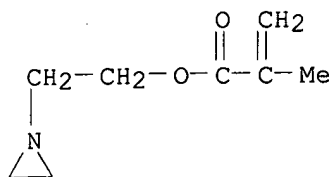
IT **6498-81-3D**, adducts with polyquinazoloneimide precursors

RL: USES (Uses)

(photosensitive compns. contg. bisazide crosslinker and, storage-stable, heat-resistant)

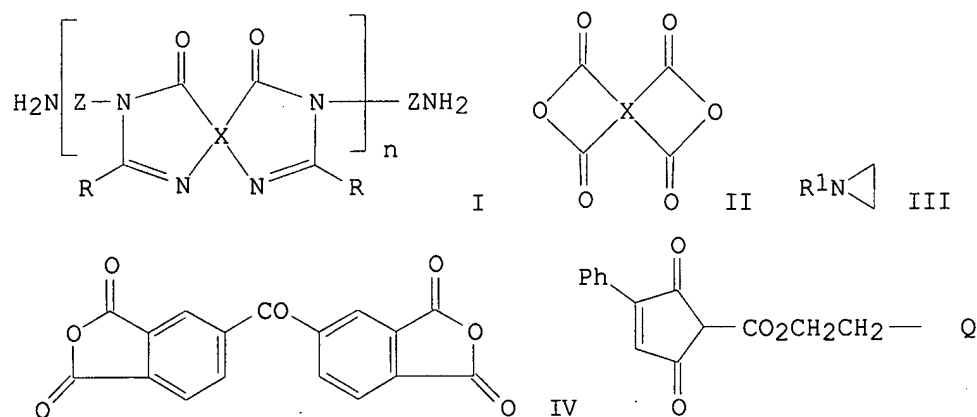
RN 6498-81-3 HCA

CN 2-Propenoic acid, 2-methyl-, 2-(1-aziridinyl)ethyl ester (9CI) (CA INDEX NAME)



L15 ANSWER 10 OF 14 HCA COPYRIGHT 2003 ACS on STN  
 106:41625 Photosensitive heat-resistant materials. Kubota, Shigeru;  
 Yanagiura, Satoshi; Moriwaki, Norimoto; Ando, Torahiko (Mitsubishi  
 Electric Corp., Japan). Jpn. Kokai Tokkyo Koho JP 61095027 A2  
**19860513** Showa, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION:  
 JP 1984-215354 19841015.

GI



AB The title materials with excellent storage stability contain compds. prepd. by treating diamines I [R = org. group, preferably 2-(meth)acryloyl ethyl, 2-cinnamoyl ethyl, Q; Z = org. group, preferably arom.; X = org. group, preferably arom.] with dianhydrides II (X1 = org. group, preferably arom.), then treating the resulting polyquinazoloneimide precursor with aziridines III (R1 = group dimerizable or polymerizable by light or radiation). Thus, treating (4-H2NC6H4)2O with 6,6'-methylenebis(2-methyl-4,3,1-benzoxazin-4-one) in m-cresol at 100-180.degree. gave a diamine (amine value 370), which was dissolved in N-methyl-2-pyrrolidone (NMP) and treated with dianhydride IV at 15.degree. to give a precursor. The precursor was treated with III (R1 = CH2:CMcO2CH2CH2) at 20.degree. and then mixed with .beta.-methylanthraquinone to give a photosensitive material. A glass plate was coated with the photosensitive material, irradiated by UV through a mask, and soaked in NMP to form an excellent relief pattern. The pattern-forming characteristics of the material showed no change even after 3-mo storage in the dark. A cured coating of the material on a Cu plate showed elec. properties as good as polyimides and a decompn. temp. of 420.degree..

IC ICM C08G073-06

ICS G03C001-71; G03F007-10; H01L021-30

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

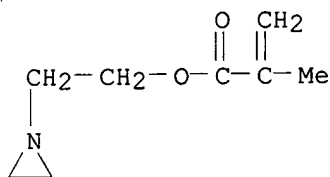
Section cross-reference(s): 37

ST precursor vinylaziridine modified; polyquinazoloneimide precursor  
 vinylaziridine modified photosensitive; polyamic acid vinylaziridine  
 adduct photosensitive; **photoresist** photosensitive  
 polyquinazoloneimide; aziridine adduct polyquinazoloneamic acid  
**photoresist**

IT **Resists**

(photo-, neg.-working, unsatd. aziridine adducts of

- polyquinazolinoneimide precursors as)
- IT 89-32-7DP, polymers with diaminobisoxazinones, adducts with unsatd. aziridines 2421-28-5DP, 3,3',4,4'-Benzophenonetetracarboxylic dianhydride, polymers with diaminobisoxazinones, adducts with unsatd. aziridines **6498-81-3DP**, reaction products with polyquinazolinoneimide precursors 24936-95-6DP, oligomeric, polymers with tetracarboxylic dianhydrides, adducts with unsatd. aziridines 25103-77-9DP, oligomeric, polymers with tetracarboxylic dianhydrides, adducts with unsatd. aziridines 28263-24-3DP, oligomeric, polymers with tetracarboxylic dianhydrides, adducts with unsatd. aziridines 28759-73-1DP, oligomeric, polymers with tetracarboxylic dianhydrides, adducts with unsatd. aziridines 96182-22-8DP, reaction products with polyquinazolinoneimide precursors 106246-22-4DP, oligomeric, polymers with tetracarboxylic dianhydrides, adducts with unsatd. aziridines 106246-23-5DP, oligomeric, polymers with tetracarboxylic dianhydrides, adducts with unsatd. aziridines 106246-64-4DP, oligomeric, polymers with tetracarboxylic dianhydrides, adducts with unsatd. aziridines 106246-65-5DP, oligomeric, polymers with tetracarboxylic dianhydrides, adducts with unsatd. aziridines
- RL: PREP (Preparation)  
(prepn. of, photosensitive, heat-resistant, with good storage stability)
- IT **6498-81-3DP**, reaction products with polyquinazolinoneimide precursors
- RL: PREP (Preparation)  
(prepn. of, photosensitive, heat-resistant, with good storage stability)
- RN 6498-81-3 HCA
- CN 2-Propenoic acid, 2-methyl-, 2-(1-aziridinyl)ethyl ester (9CI) (CA INDEX NAME)

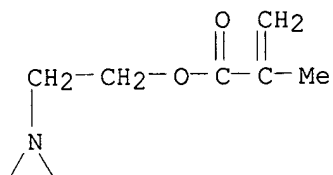


- L15 ANSWER 11 OF 14 HCA COPYRIGHT 2003 ACS on STN
- 105:43588 Heat-resistant photosensitive materials. Kubota, Shigeru; Moriwaki, Norimoto; Ando, Torahiko; Eto, Shohei (Mitsubishi Electric Corp., Japan). Jpn. Kokai Tokkyo Koho JP 60245635 A2 **19851205** Showa, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1984-103916 19840521.
- AB Storage-stable photocurable polymer compns., useful as solder **resists** and as insulating layers in semiconductor devices (no data), are prepd. by reaction of polyurea polycarboxylic acids  $Z(\text{CO}_2\text{H})_2\text{NHCONHZlNHCONH}$  (Z = tetravalent org. group; Zl = divalent org. group) with aziridine derivs. having double bonds which can be dimerized or polymd. by light or radiation. Thus, 0.01 mol 4,4'-diaminodiphenylmethane-3,3'-dicarboxylic acid 0.01 mol 4,4'-diphenylmethane diisocyanate were mixed in N-methyl-2-pyrrolidone (I) at 150.degree. for 4 h, then at 30.degree., for 1 h, to obtain a polyurea polyacid, which was mixed with 0.02 mol 2-(1-aziridinyl)ethyl methacrylate and allowed to react at 30.degree. for 4 h, then mixed with 0.15 g benzophenone and 0.03 g 4,4'-bis(dimethylamino)benzophenone (photosensitizers). The compn. was spread on a glass plate, dried, UV irradiated through a mask, and immersed in I for 60-120 s to give a crosslinked polymer relief pattern, which remained sharp after posturing



at 350.degree., and showed no thermal decompn. at 400.degree.. The compn. remained usable after storage in an opaque container at room temp. for 3 mo.

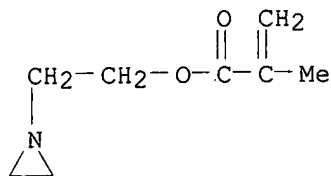
- IC ICM C08G073-06  
ICS C08F299-02; H01L023-30
- CC 35-8 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 38, 74
- ST heat resistant photosensitive unsatd polyurea; storage stable photocurable unsatd polyurea; polyureacarboxylic acid aziridine adduct photocurable; solder **resist** photocurable unsatd polyurea; semiconductor insulation layer photocurable polyurea; vinylaziridine polyureacarboxylic acid adduct photocurable
- IT Polyureas  
RL: USES (Uses)  
(unsatd., coatings and **resists**, photocurable, storage-stable, elec. insulating, heat-resistant)
- IT **Resists**  
(photo-, unsatd. polyurea compns. for, storage-stable, heat-resistant)
- IT **6498-81-3D**, reactions products with carboxy-contg. polyureas  
54190-27-1D, reaction products with unsatd. aziridine derivs.  
54243-58-2D, derivs., polymers 80847-67-2D, reaction products with unsatd. aziridine derivs. 103083-26-7D, reaction products with unsatd. aziridine derivs. 103134-44-7D, reaction products with unsatd. aziridine derivs. 103134-45-8D, reaction products with unsatd. aziridine derivs. 103171-74-0D, reaction products with unsatd. aziridine derivs.  
RL: USES (Uses)  
(coatings and **resists**, photocurable, storage-stable, elec. insulating, heat-resistant)
- IT **6498-81-3D**, reactions products with carboxy-contg. polyureas  
RL: USES (Uses)  
(coatings and **resists**, photocurable, storage-stable, elec. insulating, heat-resistant)
- RN 6498-81-3 HCA
- CN 2-Propenoic acid, 2-methyl-, 2-(1-aziridinyl)ethyl ester (9CI) (CA INDEX NAME)



- L15 ANSWER 12 OF 14 HCA COPYRIGHT 2003 ACS on STN
- 105:43587 Heat-resistant photosensitive materials. Kubota, Shigeru; Moriwaki, Norimoto; Ando, Torahiko; Eto, Shohei (Mitsubishi Electric Corp., Japan). Jpn. Kokai Tokkyo Koho JP 60245636 A2 **19851205** Showa, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1984-103917 19840521.
- AB Storage-stable polymer compns. useful as solder **resists**, insulation or passivation layers in semiconductor devices, etc. (no data), are prepd. by reaction of polyurea polycarboxylic acids [NHCONHZ(CO<sub>2</sub>H)2NHCONHZ1]<sub>n</sub> Z = tetravalent org. group; Z1 = divalent org. group), unsatd. aziridine derivs., and bisazides. Thus, 0.01 mol 4,4'-diaminodiphenylmethane-3,3'-dicarboxylic acid and 0.01 mol 4,4'-diphenylmethane diisocyanate were mixed in Me<sub>2</sub>NAC at 15-30.degree. for 4 h, then treated with 0.02 mol 2-(1-aziridinyl)ethyl methacrylate for 4 h at 25-30.degree., and mixed with 0.5 g 2,6-di(p-azidobenzal)-4-methylcyclohexanone. The compn. was spread on a glass plate, dried, UV

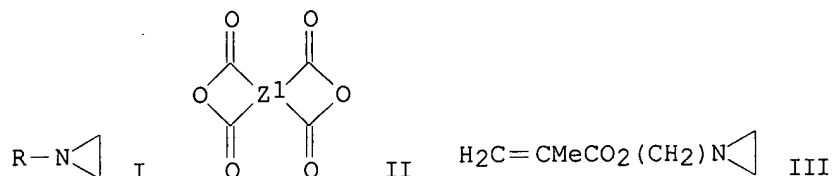
irradiated through a mask, and immersed in N-methyl-2-pyrrolidone for 60-120 s to give a good crosslinked polymer relief pattern, which remained sharp after postcuring at 200-350.degree. for 2 h. The compn. remained usable after storage in an opaque container at 30.degree. for 2 mo.

- IC ICM C08G073-06  
ICS C08F299-02; H01L023-30
- CC 35-8 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 38, 74
- ST storage stable photocurable unsatd polyurea; heat resistant photosensitive unsatd polyurea; polyureacarboxylic acid aziridine adduct photocurable; azide crosslinker photosensitive unsatd polyurea; crosslinker bisazide photocurable unsatd polyurea; solder **resist** photocurable unsatd polyurea; semiconductor insulation layer photocurable polyurea; vinylaziridine polyureacarboxylic acid adduct photocurable
- IT Polyureas  
RL: USES (Uses)  
(unsatd., coatings and **resists**, photocurable, storage-stable, elec. insulating, heat-resistant)
- IT Azides  
RL: MOA (Modifier or additive use); USES (Uses)  
(bis-, crosslinking agent, photochem., for unsatd. polyurea elec. insulating coatings and **resist**)
- IT **Resists**  
(photo-, unsatd. polyureas with bisazide crosslinkers, storage-stable, heat-resistant)
- IT Crosslinking agents  
(photochem., bisazides, for unsatd. polyurea elec. insulating coatings and **resists**)
- IT **6498-81-3D**, reaction products with carboxyl-contg. polyureas  
54190-27-1D, reaction products with unsatd. aziridines 80847-67-2D, reaction products with unsatd. aziridines 96182-22-8D, reaction products with carboxyl-contg. polyureas 103134-41-4D, reaction products with unsatd. aziridines 103134-56-1D, reaction products with unsatd. aziridines 103171-87-5D, reaction products with unsatd. aziridines 103244-13-9D, reaction products with carboxyl-contg. polyureas  
RL: USES (Uses)  
(coatings and **resists**, photocurable, storage-stable, elec. insulating, heat-resistant)
- IT 5284-79-7  
RL: MOA (Modifier or additive use); USES (Uses)  
(crosslinking agent, photochem., for unsatd. polyurea elec. insulating coatings and **resist**)
- IT **6498-81-3D**, reaction products with carboxyl-contg. polyureas  
RL: USES (Uses)  
(coatings and **resists**, photocurable, storage-stable, elec. insulating, heat-resistant)
- RN 6498-81-3 HCA
- CN 2-Propenoic acid, 2-methyl-, 2-(1-aziridinyl)ethyl ester (9CI) (CA INDEX NAME)



103:45827 Photosensitive compositions for heat-resistant pattern formation.  
 (Mitsubishi Electric Corp., Japan). Jpn. Kokai Tokkyo Koho JP 59212832 A2  
**19841201** Showa, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION:  
 JP 1983-87878 19830517.

GI



AB A heat-resistant material contains a polyimide precursor, which is prepd. by reaction of an aziridine compd. (I; R = org. group having >1 unsatd.moiety) with a polyamic acid obtained by reaction of diamine  $\text{H}_2\text{NZNH}_2$  (Z = divalent org. group) with a tetracarboxylic acid dianhydride (II; Z1 = C>1 tetravalent group), and a bisazide compd.  $\text{N}_3\text{Z}_2\text{N}_3$  (Z2 = divalent org. group). The material is esp. useful for formation of heat-resistant insulating material patterns. Thus, a polyamic acid was prepd. by stirring a mixt. of 4,4'-diaminodiphenyl ether 0.01, N-methyl-2-pyrrolidone 159, and 3,3',4,4'-benzocarboxylic acid dianhydride 0.01 mol. III 0.02 mol was added to the product and stirred. The material was obtained by addn. of 2,6-bis(p-azidobenzal)-4-methylcyclohexanone 0.002 mol to the product. A glass plate was then coated with the material, dried, and patternwise exposed to UV. Immersion in N-methyl-2-pyrrolidone gave a fine pattern, which was not affected by successive heat treatments, at 100.degree. (10 min), 200.degree. (15 min), and at 350.degree. (30 min).

IC ICM G03C001-71

ICS C08F002-48; C08F299-02; C08G073-12; G03F007-10; H01L021-30;  
 H01L021-312

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 76

IT **Resists**

(photo-, bisazide compd.-aziridine deriv.-modified polyamic acid mixts. as)

IT 5536-99-2D, reaction products with diaminodiphenyl ether-diketotetrahydrofurylmethylcyclohexenedicarboxylic anhydride copolymers  
**6498-81-3D**, reaction products with benzophenonetetracarboxylic dianhydride-diaminodiphenyl ether copolymer 24980-39-0D, reaction products with aziridinylethyl methacrylate 25986-67-8D, reaction products with aziridinylethyl phenylacrylate 96182-22-8D, reaction products with polyamic acids 96250-79-2D, reaction products with aziridinylethyl phenylacrylate 96250-80-5D, reaction products with allylaziridine

RL: USES (Uses)

(photosensitive resin compns. contg. bisazide compd. and, for heat-resistant pattern formation)

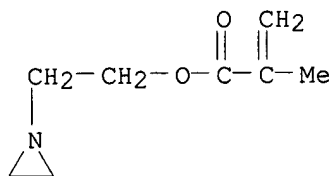
IT **6498-81-3D**, reaction products with benzophenonetetracarboxylic dianhydride-diaminodiphenyl ether copolymer

RL: USES (Uses)

(photosensitive resin compns. contg. bisazide compd. and, for heat-resistant pattern formation)

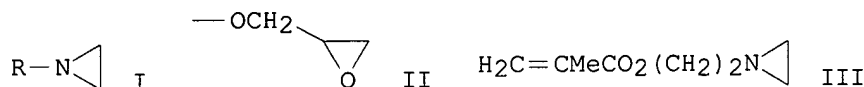
RN 6498-81-3 HCA

CN 2-Propenoic acid, 2-methyl-, 2-(1-aziridinyl)ethyl ester (9CI) (CA INDEX NAME)



L15 ANSWER 14 OF 14 HCA COPYRIGHT 2003 ACS on STN  
 103:45826 Photosensitive compositions for heat-resistant pattern formation.  
 (Mitsubishi Electric Corp., Japan). Jpn. Kokai Tokkyo Koho JP 59212833 A2  
 19841201 Showa, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION:  
 JP 1983-87879 19830517.

GI



AB Title material is a mixt. contg. (1) a polyimide precursor, which is  
 prepd. by reaction of an aziridine compd. I (R = org. unsatd. group  
 dimerizable or polymerizable by light or radiation) with a polyamide acid  
 having the repeating unit -ZNHCOZ1(CO2H)2CONH- (Z = divalent group; Z1 =  
 group derived from dianhydride of tetracarboxylic acid) and (2) an unsatd.  
 compd. having the general structure R1COR2 (R1 = org. unsatd. group  
 dimerizable or polymerizable by light or radiation; R2 = OH, NCO or II).  
 The material is useful for formation of polyimide insulation and  
 passivation patterns. Thus, polyamide acid was prepd. by addn. of  
 3,4,3',4'-diaminodiphenyl ether 0.01 mol in N-methyl-2-pyrrolidone and  
 stirring. The product was further added with III 0.016 mol, stirred, and  
 with glycidyl methacrylate 0.016 mol and stirred. Michler's ketone 0.05  
 and benzophenone 0.19 mol were mixed with the product to obtain a  
 material, which was filtered through 1.μm glass frit. A glass plate was  
 coated with the material, dried, and patternwise exposed to UV.  
 Development in N-methyl-2-pyrrolidone gave good relief patterns. Heating  
 the patterns in N at 100.degree. (15 min) and then at 200.degree. (15 min)  
 gave no damages.

IC ICM G03C001-71  
 ICS C08F002-48; C08F299-02; C08G073-12; G03F007-10; H01L021-30;  
 H01L021-312

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 Section cross-reference(s): 76

IT **Resists**  
 (photo-, aziridine deriv.-modified polyamide acids as, for  
 heat-resistant pattern formation)

IT 79-10-7, uses and miscellaneous 79-41-4, uses and miscellaneous  
 90-94-8 106-91-2 119-61-9, uses and miscellaneous 574-09-4  
 621-82-9, uses and miscellaneous 2498-66-0 4340-41-4  
 6498-81-3D, reaction products with polyamide acids 19532-86-6  
 24980-39-0D, reaction products with aziridine derivs. 24991-11-5D,  
 reaction products with aziridine derivs. 25021-08-3 26521-07-3D,  
 reaction products with aziridine derivs. 32126-24-2D, reaction products

with aziridine derivs. 33361-97-6D, reaction products with aziridine derivs. 96182-22-8D, reaction products with polyamide acids 96343-56-5D, reaction products with aziridine derivs.

RL: USES (Uses)

(photosensitive compns. contg., for heat resistant pattern formation)

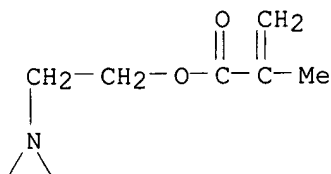
IT 6498-81-3D, reaction products with polyamide acids

RL: USES (Uses)

(photosensitive compns. contg., for heat resistant pattern formation)

RN 6498-81-3 HCA

CN 2-Propenoic acid, 2-methyl-, 2-(1-aziridinyl)ethyl ester (9CI) (CA INDEX NAME)



=> d L67 1-3 cbib abs hitind hitstr

L67 ANSWER 1 OF 3 HCA COPYRIGHT 2003 ACS on STN

127:277891 Lithium 2,2,6,6-tetramethylpiperidide and lithium 2,2,4,6,6-pentamethylpiperidide: influence of TMEDA and related chelating ligands on the solution structures. Characterization of higher cyclic oligomers, cyclic dimers, open dimers, and monomers. Remenar, Julius F.; Lucht, Brett L.; Kruglyak, Dmitriy; Romesberg, Floyd E.; Gilchirst, James H.; Collum, David B. (Department Chemistry, Baker Laboratory, Cornell University, Ithaca, NY, 14853-1301, USA). Journal of Organic Chemistry, 62(17), 5748-5754 (English) 1997. CODEN: JOCEAH. ISSN: 0022-3263. Publisher: American Chemical Society.

AB Spectroscopic investigations of 2,2,6,6-tetramethylpiperidide (LiTMP) and the conformationally locked (but otherwise isostructural) lithium 2,2,4,6,6-pentamethylpiperidide (LiPMP) are described. <sup>6</sup>Li and <sup>15</sup>N NMR spectroscopic studies of [6Li]LiPMP and [6Li, <sup>15</sup>N]LiPMP in hydrocarbon soln. reveal a mixt. comprised of four isomeric cyclic tetramers (C<sub>4h</sub>, D<sub>2h</sub>, C<sub>2v</sub>, and C<sub>s</sub>) and one isomeric cyclic trimer (C<sub>3h</sub>). These results are compared with the aggregation nos. and conformational preferences of lithium 2,2,6,6-tetramethylpiperidide (LiTMP) in the solid state studied by Lappert and co-workers. In the presence of N,N,N',N'-tetramethylethylenediamine (TMEDA), [6Li, <sup>15</sup>N]LiPMP affords monomer and open dimer to the exclusion of solvated cyclic dimer. The open dimer undergoes a degenerate intramol. rearrangement. Spectroscopic studies in TMEDA/THF mixts. reveal an unexpected competitive solvation and implicate the observable THF-solvated cyclic dimer to possess one THF per Li. Dimethylethylamine (a monodentate analog of TMEDA) and N,N,N',N'-tetramethylpropylenediamine (a six-membered ring chelating analog of TMEDA) and N,N,N',N'-tetramethylpropylenediamine (a six-membered ring chelating analog of TMEDA) are inferior as ligands for LiPMP. Investigations of LiPMP in the presence of other bidentate ligands reveal related monomers and open dimers whose proportions depend upon ligand structure and concn. The relative binding consts. and binding energies to the LiPMP monomer are reported. Ligands studied include the following: N,N,N',N'-tetraethylethylenediamine, N,N-diethyl-N',N'-dimethylethylenediamine, N,N'-diethyl-N,N'-dimethylethylenediamine, N-ethyl-N,N',N'-trimethylethylenediamine, 1,2-dipyrrolidinoethane, 1,2-dipiperidinoethane, 1-(dimethylamino)-2-pyrrolidinoethane, 1-(dimethylamino)-2-methoxyethane, 1-(dimethylamino)-2-ethoxyethane,

1-azetidino-2-methoxyethane, 1-methoxy-2-pyrrolidinoethane,  
 1-methoxy-2-piperidinoethane, 1-ethoxy-2-pyrrolidinoethane,  
 trans-N,N,N',N'-tetramethylcyclohexanediamine, trans-1-(dimethylamino)-2-  
 methoxycyclohexane, and sparteine.

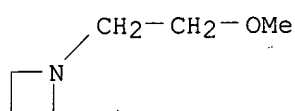
CC 22-10 (Physical Organic Chemistry)

IT 190781-13-6, 1-Azetidino-2-methoxyethane  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (6Li and 15N NMR study of soln. structure of lithium methylpiperidides  
 and influence of TMEDA and related chelating ligands)

IT 190781-13-6, 1-Azetidino-2-methoxyethane  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (6Li and 15N NMR study of soln. structure of lithium methylpiperidides  
 and influence of TMEDA and related chelating ligands)

RN 190781-13-6 HCA

CN Azetidine, 1-(2-methoxyethyl)- (9CI) (CA INDEX NAME)



L67 ANSWER 2 OF 3 HCA COPYRIGHT 2003 ACS on STN

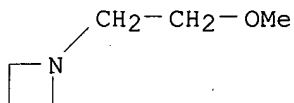
127:33734 Chelation-Based Stabilization of the Transition Structure in a  
 Lithium Diisopropylamide Mediated Dehydrobromination: Avoiding the  
 "Universal Ground State" Assumption. Remenar, Julius F.; Collum, David B.  
 (Department of Chemistry Baker Laboratory, Cornell University, Ithaca, NY,  
 14853-1301, USA). Journal of the American Chemical Society, 119(24),  
 5573-5582 (English) 1997. CODEN: JACSAT. ISSN: 0002-7863. Publisher:  
 American Chemical Society.

AB Dehydrobrominations of (.+-.)-2-exo-bromonorbornane (RBr) by lithium  
 diisopropylamide (LDA) were investigated to det. the roles of aggregation  
 and solvation. Elimination with LDA/n-BuOMe occurs by deaggregation of  
 disolvated dimers via a monosolvated monomer transition structure (e.g.,  
 [i-Pr<sub>2</sub>NLi.cntdot.n-BuOMe.cntdot.RBr].dbldag.). In contrast, elimination  
 by LDA-THF displays THF concn. dependencies that are most consistent with  
 parallel reaction pathways involving both mono- and disolvated monomer  
 transition structures. Elimination is markedly faster by LDA-DME than by  
 LDA with monodentate ligands and follows a rate law consistent with a  
 transition structure contg. a chelated monomeric LDA fragment. A no. of  
 hemilabile amino ethers reveal the capacity of different coordinating  
 functionalities to chelate. A protocol based upon kinetic methods affords  
 the relative ligand binding energies in the LDA dimer reactants. Sepg.  
 contributions of ground state from transition state stabilization allows  
 us to attribute the stabilizing effects of chelation exclusively to the  
 transition structure. The importance of chelating ligands in LDA-mediated  
 dehydrobrominations, but not in previously studied reactions of LDA, sheds  
 light on lithium ion chelation.

CC 22-4 (Physical Organic Chemistry)

IT 96-47-9, 2-Methyltetrahydrofuran 109-99-9, THF, reactions 110-71-4,  
 1,2-Dimethoxyethane 111-96-6, Diglyme 628-28-4, Butyl methyl ether  
 1931-99-3, N-(2-Methoxyethyl)piperidine 2534-77-2 3030-44-2,  
 2-Dimethylaminoethyl methyl ether 4111-54-0, Lithium diisopropylamide  
 17081-21-9, 1,3-Dimethoxypropane 20650-07-1, 1-(Dimethylamino)-3-  
 methoxypropane 34166-03-5 81349-49-7, N-(2-Methoxyethyl)pyrrolidine  
 95656-45-4 139709-38-9 190278-87-6 190278-99-0 190279-00-6  
 190279-01-7 190279-02-8 190781-13-6, N-(2-  
 Methoxyethyl)azetidine  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT

(Reactant); PROC (Process); RACT (Reactant or reagent)  
(chelation-based stabilization of the transition structure in lithium diisopropylamide mediated dehydrobromination)  
IT **190781-13-6**, N-(2-Methoxyethyl)azetidine  
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
(chelation-based stabilization of the transition structure in lithium diisopropylamide mediated dehydrobromination)  
RN 190781-13-6 HCA  
CN Azetidine, 1-(2-methoxyethyl)- (9CI) (CA INDEX NAME)



L67 ANSWER 3 OF 3 HCA COPYRIGHT 2003 ACS on STN

118:104958 Low-temperature-curable smooth corrosion-resistant coating materials. Haishi, Hidehiko; Yamamoto, Masato; Kume, Masafumi; Nagaoka, Jiro; Miyagawa, Kenji (Kansai Paint Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 04168165 A2 19920616 Heisei, 14 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-294427 19901031.

AB Additives for coating materials contain neutralized or quaternary ammonium compds. of comb-type copolymers prepd. from ethenylallyl unsatd. monomers having fatty acid residual groups 3-90, .gtoreq.1 of aminoalkyl (meth)acrylate, aminoalkyl (meth)acrylamide, quaternary ammonium salt-contg. (meth)acrylate and (meth)acrylamide 1-50, N-contg. .alpha.,.beta.-ethenylallyl unsatd. monomers 1-96, and comonomers 0-91 parts and arom. carboxylic acid dialkyltin salts such as dibutyltin dibenzoate (I). Thus, an additive for Elecron 9600 Gy (cationic electrodeposition coating) contained a reaction product of sunflower oil fatty acid, glycidyl methacrylate, N-vinyl-2-pyrrolidone, and N,N-dimethylaminoethyl methacrylate neutralized with lactic acid and I.

IC ICM C09D005-44

ICS C09D133-00; C09D139-00

CC 42-10 (Coatings, Inks, and Related Products)

Section cross-reference(s): 55

IT 88-12-0D, reaction products with dimethylaminoethyl methacrylate and glycidyl methacrylate and sunflower oil fatty acid 106-91-2D, reaction products with dimethylaminoethyl methacrylate and sunflower oil fatty acid and vinyl pyrrolidone 2680-03-7D, reaction products with azidinyethyl methacrylate and dimethylaminopropyl acrylamide and linseed oil fatty acid and vinyl pyrrolidone 3845-76-9D, N,N-Dimethylaminopropyl acrylamide, reaction products with azidinyethyl methacrylate and di-Me acrylamide and linseed oil fatty acid and vinyl pyrrolidone **145250-26-6D**, reaction products with di-Me acrylamide and dimethylaminopropyl acrylamide and linseed oil fatty acid and vinyl pyrrolidone 146122-07-8

RL: USES (Uses)

(cationic electrodeposition coatings contg. arom. carboxylic acid dialkyltin salts and, smoke and corrosion-resistant)

IT **145250-26-6D**, reaction products with di-Me acrylamide and dimethylaminopropyl acrylamide and linseed oil fatty acid and vinyl pyrrolidone

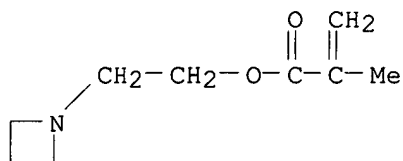
RL: USES (Uses)

(cationic electrodeposition coatings contg. arom. carboxylic acid dialkyltin salts and, smoke and corrosion-resistant)

RN 145250-26-6 HCA

CN 2-Propenoic acid, 2-methyl-, 2-(1-azetidiny)ethyl ester (9CI) (CA INDEX

(NAME)



=&gt; d L75 1,3,5,7,9,13,15,17,19,21,25,29,31,35 cbib abs hitind hitstr

L75 ANSWER 1 OF 35 HCA COPYRIGHT 2003 ACS on STN

134:147213 Molecular structure of 1-methoxymethylaziridine and methoxymethyl dimethylamine and anomeric effects. Shishkov, Igor F.; Khristenko, Lyudmila V.; Vilkov, Lev V.; Dakkouri, Marwan; Kadorkina, Gulnara K.; Dormov, Pavel E.; Kostyanovsky, Remir G. (Department of Chemistry, M.V. Lomonosov Moscow State University, Moscow, 119899, Russia). Mendeleev Communications (6), 217-220 (English) 2000. CODEN: MENCEX. ISSN: 0959-9436. Publisher: Russian Academy of Sciences.

AB For 1-methoxymethylaziridine it is proved exptl. (GED) and theor. that the equil. conformers are stabilized by the anomeric effects  $n(N) \rightarrow \sigma^*(C-O)$  and  $n(O) \rightarrow \sigma^*(C-N)$ , whereas in the case of methoxymethyl dimethylamine the calcs. predict the existence of a conformer appropriate to the  $n(N) \rightarrow \sigma^*(C-O)$  effect.

CC 22-3 (Physical Organic Chemistry)

Section cross-reference(s): 27

IT 1497-83-2, 1-Methoxymethylaziridine 62393-45-7,  
Methoxymethyl dimethylamine

RL: PRP (Properties)

(mol. structure of 1-methoxymethylaziridine and  
methoxymethyl dimethylamine)

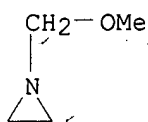
IT 1497-83-2, 1-Methoxymethylaziridine

RL: PRP (Properties)

(mol. structure of 1-methoxymethylaziridine and  
methoxymethyl dimethylamine)

RN 1497-83-2 HCA

CN Aziridine, 1-(methoxymethyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)

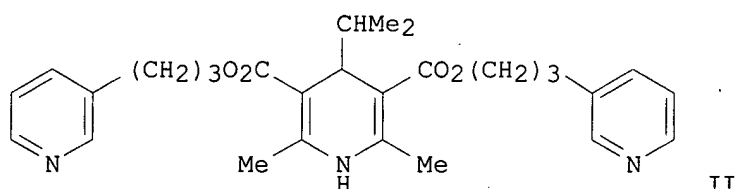
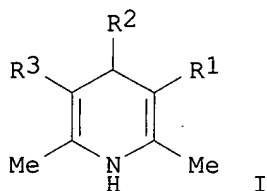


L75 ANSWER 3 OF 35 HCA COPYRIGHT 2003 ACS on STN

125:33664 Preparation and formulation of dihydropyridines as PAF antagonists and antineoplastic potentiators. Tasaka, Shigeyuki; Miura, Teruhisa; Kiue, Akira; Seki, Taketsugu; Sano, Tetsuro; Kamakura, Mie; Fujita, Masakazu. (Nikken Chemicals Co., Ltd., Japan). PCT Int. Appl. WO 9604268 A1 19960215, 48 pp. DESIGNATED STATES: W: CA, US; RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 1995-JP1507 19950728. PRIORITY: JP 1994-196204 19940729; JP 1995-79331 19950313.

GI





AB The title compds. I [R1 represents CO2A(3-pyridyl), and A represents C3-C6 linear alkylene which may have an intervening piperazine ring; R2 represents C2-C10 alkyl, alkenyl or alkynyl, substituted lower alkyl or alkenyl, or optionally substituted cycloalkyl; R3 represents the same group as R1 or CO2R4, and R4 represents optionally substituted lower alkyl], useful as PAF antagonists, antineoplastic potentiators, and thromboxane A2 inhibitors, are prepd. The title compd. II (prepn. given) in vitro at 10<sup>-5</sup> mol gave 82.7% inhibition of PAF-induced platelet aggregation. II in vitro showed IC<sub>50</sub> of > 300 x 10<sup>-7</sup> M against KCl-induced contraction of rat artery, vs. IC<sub>50</sub> of 0.8 x 10<sup>-7</sup> M for nimodipine, and IC<sub>50</sub> of 23.5 x 10<sup>-7</sup> M for verapamil.

IC ICM C07D401-12

ICS C07D401-14; A61K031-445; A61K031-495

CC 28-16 (Heterocyclic Compounds (More Than One Hetero Atom))

Section cross-reference(s): 1, 63

IT 66-25-1, Capronaldehyde 78-84-2 93-53-8, 2-Phenylpropionaldehyde 96-17-3 97-96-1 104-53-0, Benzenepropanal 106-23-0, Citronellal 107-86-8, 3-Methyl-2-butenal 122-78-1, Phenylacetaldehyde 123-05-7, 2-Ethylhexylaldehyde 123-15-9, 2-Methylvaleraldehyde 123-72-8, Butyl aldehyde 124-19-6, Nonylaldehyde 591-60-6, Butyl acetoacetate 623-30-3, 3-(2-Furyl)acrolein 947-91-1, Diphenylacetaldehyde 1846-68-0, 2-Octynal 2043-61-0, Cyclohexanecarboxaldehyde 2987-16-8 5435-64-3, 3,5,5-Trimethylhexanal 7664-41-7, Ammonia, reactions 14205-39-1 50899-09-7 54527-73-0 61382-53-4 65193-87-5, 2-Cyanoethyl acetoacetate 86575-68-0 100303-72-8 103839-99-2, 3-(3-Pyridyl)propyl acetoacetate 128995-75-5, 4-Pyridylmethyl acetoacetate 176906-73-3 176906-75-5, 3-(4-Pyridyl)propyl acetoacetate 176906-76-6, 3-(2-Pyridyl)propyl acetoacetate 176906-77-7 176906-79-9, 4-(3-Pyridylbutyl) acetoacetate 177030-31-8, 2-(3-Pyridyloxy)ethyl acetoacetate 177649-32-0 177649-71-7 **177649-72-8** 177649-73-9

RL: RCT (Reactant); RACT (Reactant or reagent)

(prepn. of dihydropyridines as PAF antagonists and antineoplastic potentiators)

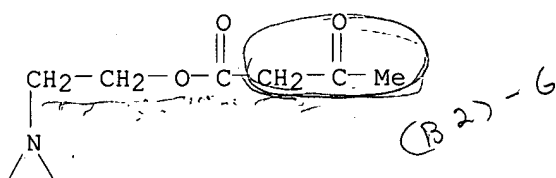
IT **177649-72-8**

RL: RCT (Reactant); RACT (Reactant or reagent)

(prepn. of dihydropyridines as PAF antagonists and antineoplastic potentiators)

RN 177649-72-8 HCA

CN Butanoic acid, 3-oxo-, 2-(1-aziridinyl)ethyl ester (9CI) (CA INDEX NAME)



L75 ANSWER 5 OF 35 HCA COPYRIGHT 2003 ACS on STN

113:185150 Uptake and metabolism of [3H]choline mustard by cholinergic nerve terminals from rat brain. Rylett, R. J.; Walters, S. A. (Dep. Physiol., Univ. West. Ontario, London, ON, N6A 5C1, Can.). Neuroscience (Oxford, United Kingdom), 36(2), 483-9 (English) 1990. CODEN: NRSCDN. ISSN: 0306-4522.

AB The objective of this study was to measure the uptake and metab. of [3H]choline mustard aziridinium ion in rat brain synaptosomes. [3H]choline mustard aziridinium ion was transported into purified rat brain synaptosomes by a hemicholinium-sensitive mechanism, but at only a fraction of the rate of uptake of [3H]choline. Following a 5-min incubation with the nerve terminal prepn., uptake of [3H]choline mustard aziridinium ion was 20% that of [3H]choline transport, but this fell to 10% of [3H]choline accumulation at 30 min incubation. Apparent Michaelis consts. derived from double reciprocal plots of velocity of transport vs. substrate concn. revealed that the apparent affinity consts. (K<sub>m</sub>) of the high-affinity choline carrier for [3H]choline mustard aziridinium ion and [3H]choline were not different (1.44 and 2.14 .mu.M for choline and choline mustard aziridinium ion, resp.). Increasing the incubation time from 5 to 30 min, during which time a proportion of the high-affinity choline carriers were irreversibly inactivated by choline mustard aziridinium ion, did not alter the binding affinity for this compd. The max. velocities of transport (V<sub>max</sub>) for the 2 compds. were different, with max. uptake of [3H]choline mustard aziridinium ion being 19.5% of that for choline at 5-min incubation and falling to only 10.6% of the max. rate of choline transport by 30-min incubation. [3H]choline mustard aziridinium ion transported into synaptosomes on the high-affinity choline carrier was metabolized, with 27% being recovered as [3H]acetylcholine mustard aziridinium ion, 27% as [3H]phosphorylcholine mustard aziridinium ion, 7% as unmetabolized [3H]choline mustard aziridinium ion and 16% recovered as an unidentified metabolite. In parallel samples, [3H]choline taken up into synaptosomes was recovered as [3H]acetylcholine (71%) and unmetabolized [3H]choline (18%) with no net prodn. of [3H]phosphorylcholine. Acetylation of [3H]choline mustard aziridinium ion amounted to only 7.6% of [3H]acetylcholine synthesized under the same conditions. These results show clearly that choline mustard aziridinium ion was accumulated into the cholinergic nerve terminals by the high-affinity choline carrier, but the amt. was small relative to the uptake of choline and was probably restricted by progressive inactivation of the transporters through covalent bond formation.

CC 2-8 (Mammalian Hormones)

IT 58921-08-7 130036-16-7

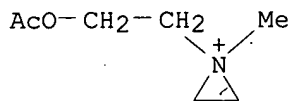
RL: FORM (Formation, nonpreparative)  
(formation of, from choline mustard aziridinium ion by brain synaptosome)

IT 58921-08-7

RL: FORM (Formation, nonpreparative)  
(formation of, from choline mustard aziridinium ion by brain synaptosome)

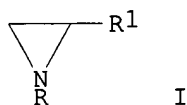
RN 58921-08-7 HCA

CN Aziridinium, 1-[2-(acetyloxy)ethyl]-1-methyl- (9CI) (CA INDEX NAME)



L75 ANSWER 7 OF 35 HCA COPYRIGHT 2003 ACS on STN  
 111:77393 Nitrogen-15 chemical shifts in aziridines. Liepins, E.; Trapencier, P.; Kalvins, I. (Inst. Org. Sint., Riga, 226006, USSR). Khimiya Geterotsiklicheskikh Soedinenii (10), 1336-9 (Russian) 1988. CODEN: KGSSAQ. ISSN: 0453-8234. OTHER SOURCES: CASREACT 111:77393.

GI



AB The <sup>15</sup>N chem. shifts of aziridines I (R = H, Me, CH<sub>2</sub>OH, CH<sub>2</sub>OMe, CH<sub>2</sub>C.tplbond.CH, allyl, 1-pyrrolidinylmethyl, Cl, NH<sub>2</sub>, SiMe<sub>3</sub>, etc.; R<sub>1</sub> = H, Me, CO<sub>2</sub>Me) were detd., and correlations were obtained with inductive and steric substituent consts., <sup>15</sup>N chem. shifts in dimethylamines and in primary amines, <sup>17</sup>O chem. shifts in oxiranes, and substituent electronegativities.

CC 22-10 (Physical Organic Chemistry)

IT 151-56-4, Aziridine, properties 1072-44-2, 1-Methylaziridine  
 1072-66-8, 1-(2-Cyanoethyl)aziridine 1074-42-6 1487-19-0,  
 1,1'-Methylenebis[aziridine] **1497-83-2**, 1-  
 (Methoxymethyl)aziridine 1523-28-0 2116-90-7, 1-  
 (Trimethylsilyl)aziridine 5536-99-2, 1-Allylaziridine 10165-13-6,  
 1-Chloroaziridine 14745-52-9, 1-(Carbomethoxymethyl)aziridine  
 20276-43-1, 1-Aziridinemethanol 30757-96-1, 1,2-Dimethylaziridine  
 32348-22-4, 1-Amino-2-methylaziridine 41056-74-0 41104-29-4,  
 1-Propargylaziridine 99409-18-4 122009-37-4  
 RL: PRP (Properties)

(NMR of nitrogen-15 in)

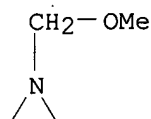
IT **1497-83-2**, 1-(Methoxymethyl)aziridine

RL: PRP (Properties)

(NMR of nitrogen-15 in)

RN 1497-83-2 HCA

CN Aziridine, 1-(methoxymethyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L75 ANSWER 9 OF 35 HCA COPYRIGHT 2003 ACS on STN  
 106:113443 Effects of acetyethylcholine mustard on [3H]quinuclidinyl benzilate binding and acetylcholine release in rat brain synaptosomes. Meyer, E. M.; Otero, D. H.; Morgan, E.; Marchand, S.; Baker, S. P. (Sch. Med., Univ. Florida, Gainesville, FL, 32610, USA). Journal of

Neurochemistry, 48(2), 477-82 (English) 1987. CODEN: JONRA9. ISSN: 0022-3042.

AB The effects of acetyethylcholine mustard [36375-30-1] and its aziridinium deriv. (AMMA) [107190-72-7] on acetylcholine (ACh) release and [3H]quinuclidinyl benzilate (QNB) binding were studied in rat cortical synaptosomes. After incubation for 5 min at 37.degree., AMMA reduced [3H]QNB binding with an 50% inhibitory concn. of 9 .mu.M. Following incubation for 5 min with 50 .mu.M AMMA and washing, there was a 62% redn. in the [3H]QNB binding capacity with no change in the KD value for the remaining receptors, a result indicating the irreversibility of the AMMA binding. AMMA and oxotremorine both reduced the basal and 30 mM K+-induced release of newly synthesized [3H]ACh in dose-dependent manners over a 2.5-min period. At identical 50 .mu.M concns., AMMA produced a much longer inhibition of basal [3H]ACh release than oxotremorine did. The inhibition of basal and 30 mM K+-induced [3H]ACh release by AMMA (10-250 .mu.M) was blocked by 2 .mu.M atropine during a 2.5-min release incubation, but not during a 30-min release incubation. After synaptosomes were treated with 50 .mu.M AMMA for 5 min and the unbound drug was washed out from the tissue, [3H]ACh release (basal and K+-induced) was reduced. AMMA (50 .mu.M) reduced high-affinity choline uptake and ACh synthesis by >90% in this tissue, but these effects did not account for the [3H]ACh release inhibition, because (a) they were not atropine sensitive and (b) hemicholinium-3 had no effect on [3H]ACh release under the conditions used in these studies, i.e., after extracellular [3H]choline was washed out. Taken together, these results suggest that AMMA may be an irreversible agonist at presynaptic muscarinic autoreceptors.

CC 1-11 (Pharmacology)

Section cross-reference(s): 2

IT 36375-30-1 107190-72-7

RL: BIOL (Biological study)

(muscarinic neurotransmission in brain cerebral cortex response to, presynaptic muscarinic autoreceptor stimulation in)

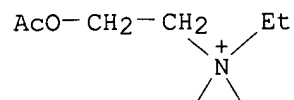
IT 107190-72-7

RL: BIOL (Biological study)

(muscarinic neurotransmission in brain cerebral cortex response to, presynaptic muscarinic autoreceptor stimulation in)

RN 107190-72-7 HCA

CN Aziridinium, 1-[2-(acetyloxy)ethyl]-1-ethyl- (9CI) (CA INDEX NAME)



L75 ANSWER 13 OF 35 HCA COPYRIGHT 2003 ACS on STN

92:158260 Kinetic data on the inhibition of high-affinity choline transport into rat forebrain synaptosomes by choline-like compounds and nitrogen mustard analogs. Rylett, B. Jane; Colhoun, E. Howard (Dep. Pharmacol., Univ. West. Ontario, London, ON, N6A 5C1, Can.). Journal of Neurochemistry, 34(3), 713-19 (English) 1980. CODEN: JONRA9. ISSN: 0022-3042.

AB A series of choline analogs and nitrogen mustard derivs. were evaluated as inhibitors of high-affinity transport of choline [62-49-7] in rat forebrain synaptosomes. When synaptosomes were preincubated for 10 min with choline mustard aziridinium ion [56049-71-9], monoethylcholine [13205-69-1], and monoethylcholine mustard aziridinium ion [63918-37-6], the agents appeared to be equipotent as inhibitors of high-affinity uptake

( $K_i = 2.63, 3.15, \text{ and } 2.72 \text{ } \mu\text{M}$ , resp.). Acetylcholine mustard aziridinium ion [58921-08-7] was less potent than these compds. ( $K_i = 27.8 \text{ } \mu\text{M}$ ), but it was more potent than ethoxycholine [4358-14-9] and ethoxycholine mustard aziridinium ion [73322-02-8] ( $K_i = 500 \text{ and } 403 \text{ } \mu\text{M}$ , resp.) as a blocker of choline transport. The high-affinity choline transport mechanism showed specificity for hydroxylated compds. over those in which the same hydroxyl had been acetylated (10-fold) and the carbonyl oxygen of the acetylated analogs was important, as its removal (to form the Et ether deriv.) decreased affinity another 20-fold. The presence of an aziridinium ring on the quaternary nitrogen in place of 2 Me groups did not affect the blocking of transport at 10 min of inhibitor preincubation, and replacement of a Me group on the N by an Et group did not alter affinity for the high-affinity carrier. The aziridinium ring on the N of the mustard analogs was important, however, in detg. the extent of reversibility of the binding of these agents to the carrier protein. Choline transport was not restored by washing synaptosomes that were incubated with choline mustard aziridinium ion or monoethylcholine mustard aziridinium ion, but was readily obtained in washed synaptosomes preincubated with monoethylcholine, hemicholinium-3 [312-45-8], or pyrrolcholine [54770-67-1]. The mustard analogs may be potent alkylators of the high-affinity choline carrier and, thus, useful agents in monitoring acetylcholine turnover in systems where the carrier is blocked.

CC 3-1 (Biochemical Interactions)

IT 312-45-8 4358-14-9 13205-69-1 54770-67-1 56049-71-9

58921-08-7 63918-37-6 73322-02-8

RL: PRP (Properties)

(choline transport response to, in brain synaptosomes)

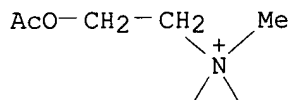
IT 58921-08-7 73322-02-8

RL: PRP (Properties)

(choline transport response to, in brain synaptosomes)

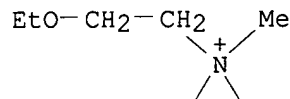
RN 58921-08-7 HCA

CN Aziridinium, 1-[2-(acetyloxy)ethyl]-1-methyl- (9CI) (CA INDEX NAME)



RN 73322-02-8 HCA

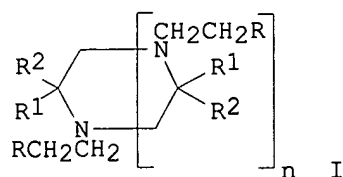
CN Aziridinium, 1-(2-ethoxyethyl)-1-methyl- (9CI) (CA INDEX NAME)



L75 ANSWER 15 OF 35 HCA COPYRIGHT 2003 ACS on STN

89:163609 Cyclic oligomers of N-substituted aziridines. Ham, George E.; Krause, Ruben L. (Dow Chemical Co., USA). U.S. US 4093615 19780606, 4 pp. (English). CODEN: USXXAM. APPLICATION: US 1974-435049 19740121.

GI



AB The title compds. I [ $n = 2-7$ ;  $R = H, OH, \text{cyano}$ ,  $R_3$  ( $R_3 = \text{alkyl, aryl, alkaryl, aralkyl, alkenyl, or OH-substituted } R_3$ ),  $R_3CO_2$ ,  $NHCOR_3$ ,  $CONHR_3$ ,  $NHCONHR_3$ ,  $NHCO_2R_3$ ,  $OR_3$ ;  $R_1 = R_2 = H, \text{alkyl}$ ] were prepd. from the resp. aziridines. N-phenethylaziridine, 4-MeC<sub>6</sub>H<sub>4</sub>SO<sub>3</sub>H, and aq. EtOH were refluxed 25 h to give I ( $n = 3, R = Ph, R_1 = R_2 = H$ ) and the resp. I ( $n = 4$ ).

IC C07D255-02

NCL 260239000BC

CC 28-25 (Heterocyclic Compounds (More Than One Hetero Atom))

Section cross-reference(s): 27

IT 1072-45-3 1072-52-2 3164-46-3 25323-93-7 46237-34-7

**58998-64-4**

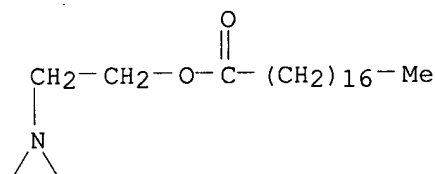
RL: RCT (Reactant); RACT (Reactant or reagent)  
(cyclooligomerization of)

IT **58998-64-4**

RL: RCT (Reactant); RACT (Reactant or reagent)  
(cyclooligomerization of)

RN 58998-64-4 HCA

CN Octadecanoic acid, 2-(1-aziridinyl)ethyl ester (9CI) (CA INDEX NAME)



L75 ANSWER 17 OF 35 HCA COPYRIGHT 2003 ACS on STN

88:940 Effects of acetylcholine mustard aziridinium ion and its choline analog on choline transport into synaptosomes. Rylett, B. Jane; Colhoun, E. Howard (Dep. Pharmacol., Univ. West. Ontario, London, ON, Can.). Canadian Journal of Physiology and Pharmacology, 55(4), 769-72 (English) 1977. CODEN: CJPPA3. ISSN: 0008-4212.

AB In synaptosomes prepd. from rat brain, aziridinium choline mustard hydrochloride [64710-70-9] inhibited high- and low-affinity choline [62-49-7] transport, with the inhibitory effect being about .apprx.10 times less than that of hemicholinium-3. Acetylcholine mustard aziridinium [58921-08-7], also inhibited the transport of choline, but it was less potent than the choline analog. Studies with choline mustard aziridinium ion may yield important information about the transport of substances into the presynaptic nerve terminal.

CC 3-1 (Biochemical Interactions)

Section cross-reference(s): 1

IT **58921-08-7** 64710-70-9

RL: PRP (Properties)

(choline transport inhibition by, in brain synaptosomes)

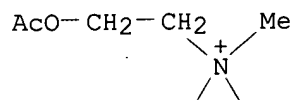
IT **58921-08-7**

RL: PRP (Properties)

(choline transport inhibition by, in brain synaptosomes)

RN 58921-08-7 HCA

CN Aziridinium, 1-[2-(acetyloxy)ethyl]-1-methyl- (9CI) (CA INDEX NAME)



L75 ANSWER 19 OF 35 HCA COPYRIGHT 2003 ACS on STN

87:23484 Silanes having an amine functional group thereon. Mitchell, Tyrone D. (General Electric Co., USA). Can. CA 995227 19760817, 23 pp.

(English). CODEN: CAXXA4. APPLICATION: CA 1972-149425 19720815.

AB (MeO)<sub>3</sub>Si(CH<sub>2</sub>)<sub>3</sub>ZH [Z = NH(I), S, OCH<sub>2</sub>CHMeCH<sub>2</sub>NH] and (EtO)<sub>3</sub>Si(CH<sub>2</sub>)<sub>3</sub>OH reacted with 2-aziridinoethyl methacrylate at 100.degree. to give (MeO)<sub>3</sub>Si(CH<sub>2</sub>)<sub>3</sub>ZCH<sub>2</sub>CHMeCO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>R (R = aziridino) and (EtO)<sub>3</sub>Si(CH<sub>2</sub>)<sub>3</sub>OCH<sub>2</sub>CHMeCO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>R, resp. I reacted analogously with CH<sub>2</sub>:CMeCO(OCH<sub>2</sub>CH<sub>2</sub>)<sub>3</sub>R (R = aziridino).

CC 29-6 (Organometallic and Organometalloidal Compounds)

IT 63120-82-1

RL: RCT (Reactant); RACT (Reactant or reagent)

(addn. reaction of, with (aminopropyl)trimethoxysilane)

IT 6498-81-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(addn. reaction of, with (trialkoxysilyl)alkyl derivs.)

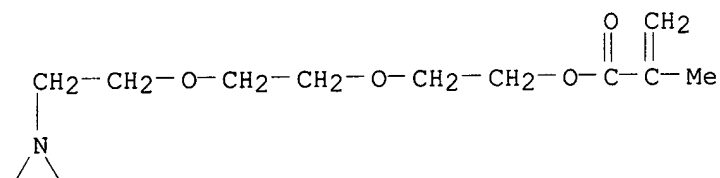
IT 63120-82-1

RL: RCT (Reactant); RACT (Reactant or reagent)

(addn. reaction of, with (aminopropyl)trimethoxysilane)

RN 63120-82-1 HCA

CN 2-Propenoic acid, 2-methyl-, 2-[2-[2-(1-aziridinyl)ethoxy]ethoxy]ethyl ester (9CI) (CA INDEX NAME)



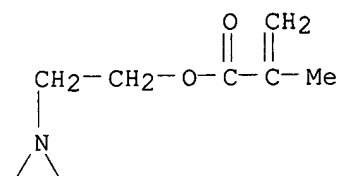
IT 6498-81-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(addn. reaction of, with (trialkoxysilyl)alkyl derivs.)

RN 6498-81-3 HCA

CN 2-Propenoic acid, 2-methyl-, 2-(1-aziridinyl)ethyl ester (9CI) (CA INDEX NAME)



L75 ANSWER 21 OF 35 HCA COPYRIGHT 2003 ACS on STN

84:159530 Inhibition of choline transport into human erythrocytes by choline

mustard aziridinium ion. Clement, John G.; Colhoun, E. Howard (Dep. Pharmacol., Univ. West. Ontario, London, ON, Can.). Canadian Journal of Physiology and Pharmacology, 53(6), 1089-93 (English) 1975. CODEN: CJPPA3. ISSN: 0008-4212.

- AB Acetylcholine mustard aziridinium ion [58921-08-7] inhibited the transport of 3H-labeled choline chloride [67-48-1] into human erythrocytes. Treatment of the erythrocytes with 1 .times. 10<sup>-4</sup> M tetraethylpyrophosphate prevented the inhibition of [3H] choline transport by acetylcholine mustard aziridinium ion. Hydrolyzed acetylcholine mustard aziridinium ion inhibited choline transport both in the presence and absence of 1 .times. 10<sup>-4</sup> M tetraethylpyrophosphate. The product of hydrolysis was equipotent with acetylcholine mustard [36375-30-1] in its ability to inhibit choline transport; incubation of this product with Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> prevented inhibition of choline transport thereby indicating the presence of an aziridinium ion. The hydrolysis product is likely to be choline mustard aziridinium ion [56049-71-9]. Results on the efflux of [3H]choline from erythrocytes in the presence of the proposed choline mustard aziridinium ion showed that the mustard moiety was transported into the red cells on the choline carrier. The rate of efflux of [3H]choline produced by choline mustard aziridinium ion was 55% of that produced by the same concn. of choline. It is concluded that acetylcholinesterase (EC 3.1.1.7) [9000-81-1] of red cells rapidly hydrolyzes acetylcholine mustard aziridinium ion to acetate and choline mustard aziridinium ion and the latter compd. can act as a potent inhibitor of choline transport. This finding would indicate that the toxicity of acetylcholine mustard in the mouse is due to the formation of choline mustard aziridinium ion.

CC 1-4 (Pharmacodynamics)

IT 58921-08-7

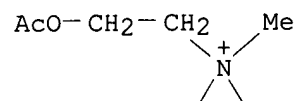
RL: BIOL (Biological study)  
(choline transport by erythrocyte inhibition by)

IT 58921-08-7

RL: BIOL (Biological study)  
(choline transport by erythrocyte inhibition by)

RN 58921-08-7 HCA

CN Aziridinium, 1-[2-(acetyloxy)ethyl]-1-methyl- (9CI) (CA INDEX NAME)



L75 ANSWER 25 OF 35 HCA COPYRIGHT 2003 ACS on STN

78:23877 Synthesis and pharmacological actions of 2-[(2-chloroethyl)methylamino]ethyl acetate and some of its derivatives on the isolated guinea pig ileum. Jackson, Clarence Harold; Hirst, Maurice (Dep. Pharmacol., Univ. West. Ontario, London, ON, Can.). Journal of Medicinal Chemistry, 15(11), 1183-4 (English) 1972. CODEN: JMCMAR. ISSN: 0022-2623.

- AB 1-(2-Hydroxyethyl)-1-methylaziridinium chloride acetate (I) [36895-01-9] was probably the agonist species responsible for the spasmogenic activity of 2-[(2-chloroethyl)methylamino]ethyl acetate (II) [36375-30-1] on the guinea pig ileum. This was based on the low activity of several other possible degradation products of II, prepd. by synthesis, and the fact that quaternary Me salts of cholinergic compds. are commonly more active than the corresponding tertiary amines.

CC 1-3 (Pharmacodynamics)

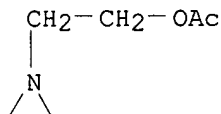
Section cross-reference(s): 23, 27



IT **6498-79-9** 19836-77-2 36375-30-1 40066-89-5 40066-92-0  
 40066-93-1 40066-94-2 40066-95-3  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)  
 (cholinomimetic activity of, in intestine)

IT **6498-79-9**  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)  
 (cholinomimetic activity of, in intestine)

RN 6498-79-9 HCA  
 CN 1-Aziridineethanol, acetate (ester) (8CI, 9CI) (CA INDEX NAME)



L75 ANSWER 29 OF 35 HCA COPYRIGHT 2003 ACS on STN  
 66:60433 Infrared spectra of N-substituted aziridine compounds. Spell, Harry L. (Dow Chem. Co., Freeport, TX, USA). Analytical Chemistry, 39(2), 185-93 (English) 1967. CODEN: ANCHAM. ISSN: 0003-2700.

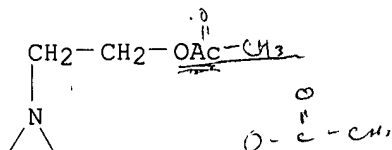
AB A study of over 200 N-substituted aziridine compds. distributed among 12 general types of structure by ir spectroscopy gave, reliable spectra-structure correlations for the aziridine ring. Ring-opening reaction studies, polymn. rates, and kinetic studies incorporated these correlations. Frequency shifts in certain bands were used to det. the effects that the ring and various ring substituents have on each other and compared with ring-opened analogs. Some of the group frequencies possess a high degree of constancy in intensity and were useful for quant. and structural detns. The shifts in C-H stretching frequencies of the aziridine methylene groups as a result of the changing chem. nature of the N substituent was correlated to Taft's .sigma.I consts. of the substituents. The results agreed with N.M.R. and chem. reactivity data which indicate low resonance interaction involving these groups.

CC 73 (Spectra and Other Optical Properties)

IT 51-18-3 52-46-0 151-56-4 470-27-9 545-55-1 671-52-3 671-53-4  
 1072-45-3 1072-50-0 1072-65-7 1120-85-0 1192-75-2 1192-76-3  
 1195-67-1 5536-99-2 6022-72-6 **6498-79-9** 10165-13-6  
 13148-34-0 13416-48-3 14924-95-9 14924-96-0 14924-97-1  
 14925-03-2 14925-07-6 15012-83-6  
 RL: PRP (Properties)  
 (spectrum (ir) of)

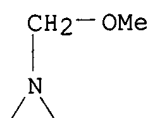
IT **6498-79-9**  
 RL: PRP (Properties)  
 (spectrum (ir) of)

RN 6498-79-9 HCA  
 CN 1-Aziridineethanol, acetate (ester) (8CI, 9CI) (CA INDEX NAME)

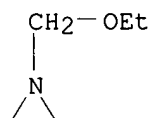


L75 ANSWER 31 OF 35 HCA COPYRIGHT 2003 ACS on STN  
 64:107193 Original Reference No. 64:20257c-d Mutagenic activity of  
 N-substituted ethylenimines. Bartoshevich, Yu. E.; Kostyanovskii, R. G.

- (Inst. Antibiotics, Moscow). Antibiotiki, 10(12), 1069-78 (Russian) 1965.
- AB The mutagenic effect of 53 derivs. of ethylenimine was estd. in the back-mutation system of leucine-dependent *Streptomyces griseus*. After treatment with ethylenimine the no. of mutants per 107 cells was 356 while that for N-substituted ethylenimines decreased to 1-50.
- CC 62 (Microbial Biochemistry)
- IT 52-24-4, Phosphine sulfide, tris(1-aziridinyl)- 460-07-1, Aziridine, 1-acetyl- 503-12-8, 2-Butanone, 4-(1-aziridinyl)- 696-18-4, Aziridine, 1-phenyl- 738-99-8, Phosphine oxide, 1,4-piperazinediylbis[bis(1-aziridinyl)]- 882-58-6, Phosphinic amide, P,P-bis(1-aziridinyl)-N-2-pyrimidinyl- 1078-79-1, Phosphine oxide, bis(1-aziridinyl)(2-methyl-3-thiazolidinyl)- 1135-06-4, Aziridine, 1,1'-[[[2-(1-aziridinyl)ethyl]imino]dimethylene]bis- 1497-82-1, Aziridine, 1-[(benzyloxy)methyl]- 1497-83-2, Aziridine, 1-(methoxymethyl)- 1523-27-9, Aziridine, 1-[(diethylamino)methyl]- 1523-28-0, Pyrrolidine, 1-(1-aziridinylmethyl)- 1593-49-3, Aziridine, 1-(ethoxymethyl)- 2541-35-7, Hypoxanthine, 2-(1-aziridinylmethyl)-1,9-dimethyl- 3408-52-4, Proline, 1-[2-[[bis(1-aziridinyl)phosphinyl]amino]-6-chloro-4-pyrimidinyl]-, ethyl ester 3795-89-9, 1-Piperazinecarboxamide, 4-[2-[[bis(1-aziridinyl)phosphinyl]amino]-6-chloro-4-pyrimidinyl]-N,N-diethyl- 3795-90-2, 2H-1,3,2-Oxazaphosphorine, 2-(1-aziridinyl)tetrahydro-, 2-oxide 3795-91-3, Oxamide, N,N'-bis[2-(1-aziridinyl)ethyl]- 3795-93-5, Pyrrolidine, 1-(.alpha.-1-aziridinylbenzyl)- 3795-94-6, Aziridine, 1-[.alpha.-(dimethylamino)furfuryl]- 3795-95-7, 1-Aziridinemethanol, .alpha.-tribromomethyl)- 3795-98-0, Aziridine, 1-(diethylmethylsilyl)- 3795-99-1, Aziridine, 1-[p-[bis(2-chloroethyl)amino]phenyl]acetyl]- 3796-00-7, 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6-pentakis(1-aziridinyl)-2,2,4,4,6,6-hexahydro-6-piperidino- 3861-04-9, Phosphinic amide, P,P-bis(1-aziridinyl)-N-[2-(dimethylamino)-9-methyl-9H-purin-6-yl]- 3861-05-0, Phosphine oxide, bis(1-aziridinyl)[2-(o-nitrophenyl)-3-thiazolidinyl]- 3861-06-1, Pyridine, 3-[N-[2-(1-aziridinyl)ethyl]formimidoyl]-1,4-dihydro- 3974-84-3, Aziridine, 1,1'-[(methylimino)dimethylene]bis- 3974-85-4, Aziridine, 1,1'-[(ethylimino)dimethylene]bis- 3974-91-2, Aziridine, 1-[(dimethylamino)methyl]- 4025-27-8, Aziridine, 1-[.alpha.-(diallylamino)benzyl]- 4025-28-9, Azetidine, 1-(.alpha.-1-aziridinylbenzyl)- 4025-30-3, Piperidine, 1-(.alpha.-1-aziridinylbenzyl)- 4025-31-4, Morpholine, 4-(.alpha.-1-aziridinylbenzyl)- 4025-41-6, Morpholine, 4-(.alpha.-1-aziridinylfurfuryl)- 4025-42-7, Pyridine, 3-[1-aziridinyl(dimethylamino)methyl]- 4921-46-4, Hypoxanthine, 8-(1-aziridinylmethyl)-2-ethoxy-1,9-dimethyl- 6999-33-3, Aziridine, 1-(diethylsilyl)- 7410-92-6, Aziridine, 1-(methyldiphenylsilyl)- 7410-93-7, Aziridine, 1-[p-[bis(2-chloroethyl)amino]benzoyl]- 7410-95-9, Aziridine, 1-[4-[p-[bis(2-chloroethyl)amino]phenyl]butyryl]- 7410-97-1, 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,6-tetrakis(1-aziridinyl)-2,2,4,4,6,6-hexahydro-4,6-dipiperidino- 7410-98-2, 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,6-tetrakis(1-aziridinyl)-2,2,4,4,6,6-hexahydro-4,6-dimorpholino- 7411-02-1, Phosphinic amide, P,P-bis(1-aziridinyl)-N-(4,5-dichloro-2-pyrimidinyl)- 7411-04-3, Proline, 1-[2-[[bis(1-aziridinyl)phosphinyl]amino]-4-pyrimidinyl]-, ethyl ester 7417-97-2, 2H-1,3,2-Oxazaphosphorine, 2-(1-aziridinyl)tetrahydro-, 2-sulfide 7439-09-0, Phosphine oxide, bis(1-aziridinyl)(2-cyclohexyl-3-thiazolidinyl)- 7444-90-8, Aziridine, 1-[p-[bis(2-chloroethyl)amino]hydrocinnamoyl]- (mutation of *Streptomyces griseus* by)
- IT 1497-83-2, Aziridine, 1-(methoxymethyl)- 1593-49-3, Aziridine, 1-(ethoxymethyl)- (mutation of *Streptomyces griseus* by)
- RN 1497-83-2 HCA
- CN Aziridine, 1-(methoxymethyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 1593-49-3 HCA  
CN Aziridine, 1-(ethoxymethyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)

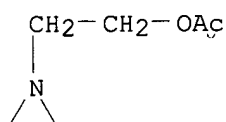


L75 ANSWER 35 OF 35 HCA COPYRIGHT 2003 ACS on STN  
59:21591 Original Reference No. 59:3853e-g Synthesis of possible cancer  
chemotherapeutic compounds based on enzyme approach. IV. Aziridine  
derivatives. Tsou, K. C.; Hoegerle, K.; Su, Helen C. F. (Borden Co.,  
Philadelphia, PA). Journal of Medicinal Chemistry, 6(4), 435-9  
(Unavailable) 1963. CODEN: JMCMAR. ISSN: 0022-2623.  
AB cf. CA 56, 14054e. Several .beta.-(1-aziridinyl)propionate esters,  
1,1'-acylaziridines from dibasic acids, (1-aziridinyl)formates,  
.beta.-(1-aziridinyl)ethyl esters, and other ethylenimine derivs. have  
been prepd. as possible cancer chemotherapeutic compds. based on enzyme  
rationale. The acylbis(aziridines) from dibasic acids are in general  
unstable. In the prepn. of 1,1'-malonyl bis(aziridine), only the compd.  
from ring opening, malonic acid bis(.beta.-chloroethyl)amide was obtained.  
The .beta.-(1-aziridinyl)propionate ester (I) of ethyleneglycol was found  
to be active in the S-180, CA-755, and L-1210 systems.  
1,1'-(2,2-Dimethylpropylene)bis(aziridinyl) formate was designed to  
simulate the well-known muscle relaxant, 2-methyl-2-propyl-1,3-propanediol  
dicarbamate. Infrared spectra and biol. activities of the compds. are  
discussed.  
CC 37 (Heterocyclic Compounds (One Hetero Atom))  
IT 680-31-9, Phosphoric triamide, hexamethyl- 725-85-9, Bibenzyl,  
.alpha.,.alpha.'-epoxy-2,2'-difluoro- 881-92-5, 1-Aziridinecarboxylic  
acid, ethylene ester 908-82-7, 1-Aziridinecarboxylic acid,  
isopropylidenedi-p-phenylene ester 1072-52-2, 1-Aziridineethanol  
1073-77-4, 1-Aziridinepropionic acid, methyl ester 1487-19-0, Aziridine,  
1,1'-methylenebis- 1675-22-5, Ammonium, [bis(dimethylamino)(p-fluoro-  
.alpha.-hydroxybenzyl)phosphoranylidene]dimethyl, hydroxide, inner salt  
3452-65-1, 1-Aziridinecarboxylic acid, diester with diethylene glycol  
3691-18-7, Aziridine, 1,1'-malonylbis- 4128-83-0, 1-Aziridinepropionic  
acid, ethylene ester 5470-07-5, Aziridine, 1,1'-succinylbis-  
**6498-79-9**, 1-Aziridineethanol, acetate (ester) **6498-80-2**  
, Butyric acid, 2-(1-aziridinyl)ethyl ester 13527-85-0, Pyridine,  
2,2'-(epoxyethylene)di-, trans- 13527-86-1, Pyridine,  
2,2'-(epoxyethylene)di-, cis- 14745-54-1, 1-Aziridinepropionic acid,  
vinyl ester 20276-43-1, 1-Aziridinemethanol 20459-99-8, Ethane,  
1,2-epoxy-1,2-di-1-naphthyl- 21383-80-2, Aziridine, 1,1'-glutarylbi-  
22480-27-9, 1-Aziridinepropionic acid, allyl ester 24653-60-9,  
1-Aziridinecarboxylic acid, allyl ester 40651-56-7, Malonamide,  
N,N'-bis(2-chloroethyl)- **68252-32-4**, 1-Aziridineethanol,  
propionate 90225-47-1, Phosphorane, chloro[(2,2-  
dichlorovinyl)oxy]tris(dimethylamino)- 90728-98-6, 1,5-Pentanediol,  
1,5-bis(1-aziridinyl)- 91208-58-1, .alpha.,.alpha.'-Bi-p-tolunitrile,  
.alpha.,.alpha.'-epoxy- 91498-73-6, Furan, 2-(o-chloro-.alpha.,.beta.-

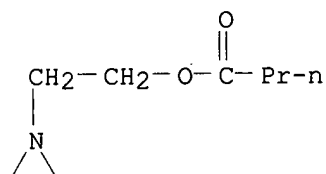
epoxyphenethyl)- 92060-88-3, Bibenzyl, .alpha.,.alpha.'-epoxy-3,3'-  
 dinitro- 92153-02-1, Bibenzyl, 4,4'-dichloro-.alpha.,.alpha.'-epoxy-  
 92159-00-7, Bibenzyl, 2,2',6,6'-tetrachloro-.alpha.,.alpha.'-epoxy-  
 92218-57-0, Bibenzyl, 2,2'-dichloro-.alpha.,.alpha.'-epoxy- 93647-88-2,  
 Bibenzyl, 3,3'-dibromo-.alpha.,.alpha.'-epoxy- 93986-38-0, Bibenzyl,  
 2'-chloro-.alpha.,.alpha.'-epoxy-3,4-(methylenedioxy)- 94428-44-1,  
 .alpha.,.alpha.'-Bi-p-tolualdehyde, .alpha.,.alpha.'-epoxy- 94648-46-1,  
 1-Aziridinecarboxylic acid, 2,2-dimethyltrimethylene ester

(prepn. of)

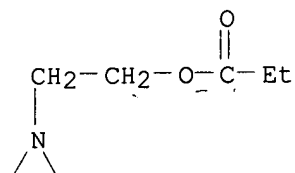
IT **6498-79-9**, 1-Aziridineethanol, acetate (ester) **6498-80-2**  
 , Butyric acid, 2-(1-aziridinyl)ethyl ester **68252-32-4**,  
 1-Aziridineethanol, propionate  
 (prepn. of)  
 RN 6498-79-9 HCA  
 CN 1-Aziridineethanol, acetate (ester) (8CI, 9CI) (CA INDEX NAME)



RN 6498-80-2 HCA  
 CN Butanoic acid, 2-(1-aziridinyl)ethyl ester (9CI) (CA INDEX NAME)



RN 68252-32-4 HCA  
 CN 1-Aziridineethanol, propanoate (ester) (9CI) (CA INDEX NAME)



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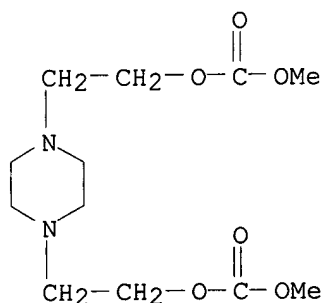
L78 ANSWER 1 OF 22 HCA COPYRIGHT 2003 ACS on STN

137:317981 Ink-jet printing sheets with high ink absorption and good  
 discoloration resistance of images. Takashima, Masanobu; Nagata, Kozo;  
 Yamada, Hisao; Koike, Kazuyuki; Yoshimura, Kosaku (Fuji Photo Film Co.,  
 Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002307822 A2 20021023, 37 pp.  
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-13005 20020122.  
 PRIORITY: JP 2001-15021 20010123.

AB The sheets have ink-receiving layers which contain (i) (un)substituted  
 hexahydro-1H-1,4-diazepine or (un)substituted piperazine or (ii)  
 water-sol. polymers (e.g., PVA), >60% (based on solids) microparticles,  
 and N-(un)substituted piperazine or azacyclic compds. Four Markushes for  
 the aforementioned hindered amines, and preferable procedures for prepn. of

the sheets are described. Addnl., crosslinking agents (e.g., B compds.) for the polymers and mordants may be incorporated in the ink-receiving layers.

- IC ICM B41M005-00  
ICS B41J002-01
- CC **74-6** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 28
- IT 103-76-4, 1-Piperazineethanol 106-55-8 108-49-6 109-01-3 109-07-9  
120-43-4 140-31-8, 1-Piperazineethanamine 505-66-8 2762-32-5,  
2-Piperazinecarboxylic acid 3477-43-8 7209-38-3, 1,4-  
Piperazinedipropanamine 17719-81-2, 4-Morpholinehexanol 23159-07-1,  
1-Pyrrolidinepropanamine 27578-60-5, 1-Piperidineethanamine  
30551-89-4, PAA 10C 46206-24-0 58619-58-2 61134-91-6 69296-06-6  
83474-32-2 99839-23-3 113812-25-2 **141578-01-0** 471925-16-3  
471925-17-4 471925-18-5, 2-Piperazinamine  
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
(ink-receiving layers; ozone- and UV-resistant ink-jet printing sheets contg. sp. hindered amines as discoloration inhibitors)
- IT **141578-01-0**  
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
(ink-receiving layers; ozone- and UV-resistant ink-jet printing sheets contg. sp. hindered amines as discoloration inhibitors)
- RN 141578-01-0 HCA
- CN Carbonic acid, 1,4-piperazinediyl-di-2,1-ethanediyl dimethyl ester (9CI)  
(CA INDEX NAME)



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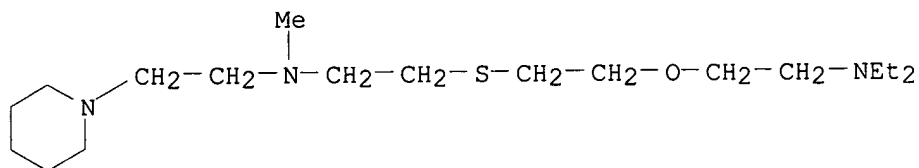
L78 ANSWER 5 OF 22 HCA COPYRIGHT 2003 ACS on STN

125:288715 Silver halide photographic film and its processing. Sudo, Susumu; Ikeuchi, Satoru; Usagawa, Yasushi (Konishiroku Photo Ind, Japan). Jpn. Kokai Tokkyo Koho JP 08201955 A2 **19960809** Heisei, 37 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-12730 19950130.

AB In the material comprising a support coated with .gtoreq.1 Ag halide emulsion layer, the emulsion layer or .gtoreq.1 of the other layers contain a hydrazine compd. and R1R2NJ1S(J2X1)nJ3NR3R4 or R5R6NJ4R9J5X(J6X3)mJ7NR7R8 [R1-9 = aliph. group; J1-3, J6-7 = (substituted) alkylene, alkenylene, ureylene, iminocarbonyloxy, iminosulfonyl, carbonyldioxy; J4-5 = (substituted) alkylene, alkenylene; R1 and R2, R3 and R4, R1 and J1, R3 and J3, R5 and R6, R7 and R8, R5 an J4, R7 an J7 may form a ring; X1 = thio, carbonyl, oxycarbonyl, (substituted) iminocarbonyl; X2-3 = thio, oxy, carbonyl, oxycarbonyl, (substituted)

iminocarbonyl; m, n = 0-1]. The hydrazine compd. may be ANA1NA2B (A = aliph. group, arom. group, heterocycle; B = acyl, alkylsulfonyl, arylsulfonyl, alkylsulfinyl, arylsulfinyl, carbamoyl, alkoxycarbonyl, aryloxycarbonyl, sulfamoyl, sulfinamoyl, alkoxysulfonyl, thioacyl, thiocarbamoyl, oxalyl, heterocycle; A1-2 = H, acyl sulfonyl, oxalyl). The material is processed with a developer with pH .ltoreq.11.0. The material gives high contrast images with good dot reprodn. even when developed with low pH developer.

- IC ICM G03C001-295  
ICS G03C001-06; G03C001-34; G03C005-29
- CC **74-2** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- IT 183010-88-0 183010-89-1 183010-90-4 183010-91-5 183010-92-6  
183010-93-7 183010-94-8 183010-95-9 183010-96-0 183010-97-1  
**183010-98-2** 183010-99-3 183011-00-9 183011-01-0  
183011-02-1 183011-03-2  
RL: DEV (Device component use); MOA (Modifier or additive use); USES  
(Uses)  
(nucleation accelerator; photog. film contg. nucleation accelerator and hydrazine compd.)
- IT **183010-98-2**  
RL: DEV (Device component use); MOA (Modifier or additive use); USES  
(Uses)  
(nucleation accelerator; photog. film contg. nucleation accelerator and hydrazine compd.)
- RN 183010-98-2 HCA
- CN 1-Piperidineethanamine, N-[2-[[2-[2-(diethylamino)ethoxy]ethyl]thio]ethyl]-N-methyl- (9CI) (CA INDEX NAME)



=> d L78 3,7,9,11,13,15,17,19,20-22 cbib abs hitind hitstr

L78 ANSWER 3 OF 22 HCA COPYRIGHT 2003 ACS on STN

129:73984 Silver halide photographic material containing hydrazine and gelatin-interacting compound, its process and the image-forming method. Muramatsu, Yasuhiko (Konica Co., Japan). Jpn. Kokai Tokkyo Koho JP 10133317 A2 **19980522** Heisei, 73 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-292617 19961105.

AB Claimed photog. material having a Ag halide emulsion layer on a support contains a hydrazine deriv. and an amine having a functional group or the precursor which reacts with the amino or carboxy group in the side chain of the gelatin mol. The amine or the precursor has the structure AmLnR1NR2R3 (I; A = functional group or the precursor stated above; R1 = alkylene, alkenylene, arylene; R2 and R3 = H, alkyl, alkenyl, aryl; L = linkage group; m = 0, 1; n = 1-4). Also claimed is the method for processing the material by an automatic processor using a reductone-contg. developer soln. of pH of 9.0-10.9 with the replenishing rate of 30-200 L/m2. Further claimed is the image-forming method comprising developing the photog. material with a solid processing chem. It provides an image with low fog, low black pepper d. and high contrast, even by the low pH developer soln. It also has a good processing stability. Suitable

comps. I are N-(vinylsulfo-ethyl)diethylamine, N-(vinylsulfo-ethoxyethyl)diethylamine, N-[1-ethyl-1-(4-ethyleneiminocarbonylamino-phenoxy)]diethyl amine, n-[epoxymethoxy(triethoxy)ethyl]diethylamine, etc., and suitable reductone added to the developer as the developing agent is an ascorbic acid deriv.

IC ICM G03C001-06

ICS G03C001-295; G03C005-26; G03C005-29; G03C005-30; G03C005-31

CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 17700-22-0 197900-28-0 208936-75-8 208936-76-9 208936-77-0

208936-78-1 208936-79-2 208936-80-5 208936-81-6

208936-82-7 208936-83-8 208936-85-0 208936-86-1 208936-87-2

208936-88-3 208936-89-4 208936-90-7 208936-91-8 208936-92-9

208936-93-0 208936-94-1 208936-95-2 208936-96-3 208936-97-4

208936-98-5 208936-99-6

RL: DEV (Device component use); USES (Uses)

(photog. material contg. hydrazine and gelatin-interacting amine compd. for photomech. use)

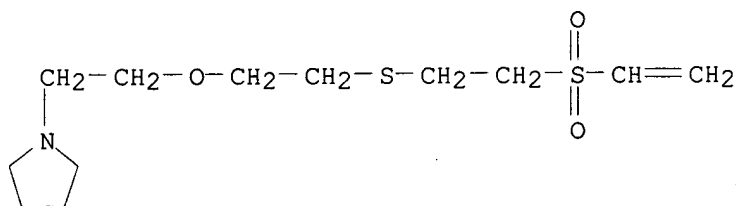
IT 208936-75-8 208936-80-5

RL: DEV (Device component use); USES (Uses)

(photog. material contg. hydrazine and gelatin-interacting amine compd. for photomech. use)

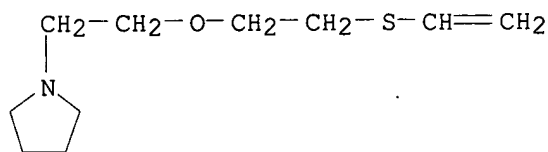
RN 208936-75-8 HCA

CN Pyrrolidine, 1-[2-[2-[[2-(ethenylsulfonyl)ethyl]thio]ethoxy]ethyl]- (9CI)  
(CA INDEX NAME)



RN 208936-80-5 HCA

CN Pyrrolidine, 1-[2-[2-(ethenylthio)ethoxy]ethyl]- (9CI) (CA INDEX NAME)



L78 ANSWER 7 OF 22 HCA COPYRIGHT 2003 ACS on STN

125:127606 Method for developing hydrazine-containing silver halide photographic material in low pH and low replenishment system. Ezoe, Toshihide; Fukui, Yasuta (Fuji Photo Film Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08087093 A2 19960402 Heisei, 53 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-244935 19940914.

AB The claimed method for developing a black-and-white Ag halide photog. material has the following features: (1) it is applied to the material contg. a hydrazine deriv. ANHNH(C:O)nNR12 or ANHNH(C:O)(C:O)OR3 (A = aryl, O- or S-contg. heterocyclic group; when n = 1, R1 and R2 = H, alkyl, alkenyl, alkynyl, alkoxy, aryl, heterocyclic group, OH, alkenyloxy, aryloxy, heterocyclic oxy; when n = 2, R1 and R2 = the same meaning as those for n = 1, but at least one of R1 and R2 must be alkenyl, alkynyl, alkoxy, heterocyclic group, OH, alkenyloxy, aryloxy, satd. heterocyclic

oxy; R3 = alkynyl, satd. heterocyclic group) and (2) the processing comprises imagewise exposure and subsequent development using a replenisher which is characterized with (a) the incorporation of a dihydroxybenzene and a super-additive auxiliary developer in the initiator and the replenisher, (b) the buffer capacity of .ltoeq.0.25 pH increase for 0.1 mol addn. of NaOH, (c) pH of the initiator between 9.5 and 11.0, and (d) replenishment rate of .ltoeq.225 mL/m<sup>2</sup>. The developer soln. may contain ascorbic acid in addn. to the dihydroxybenzene. The method provides images with high contrast, the developer soln. has high stability, and the processing system shows good process consistency.

IC ICM G03C005-29

ICS G03C001-06; G03C001-295; G03C005-30; G03C005-31

CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 116822-18-5 153344-48-0 160792-38-1 178562-87-3 178562-88-4

```

110022 10 0 155511 10 0 100712559 10 0 100712559
RL: DEV (Device component use); MOA (Modifier or additive use); USES
(Uses)

```

(nucleating accelerator; development of hydrazine-contg. silver halide  
photoq. material in low pH and low replenishment system)

IT 178562-88-4

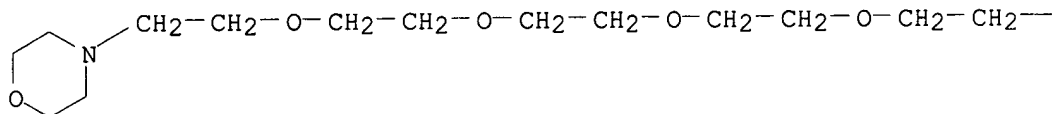
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(nucleating accelerator; development of hydrazine-contg. silver halide photog. material in low pH and low replenishment system)

RN 178562-88-4 HCA

3,6,9,12-Tetraoxa-15-thiaheptadecan-17-amine, N,N-diethyl-1-(4-morpholinyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

$$-\text{S}-\text{CH}_2-\text{CH}_2-\text{NEt}_2$$

L78 ANSWER 9 OF 22 HCA COPYRIGHT 2003 ACS on STN

123:241833 Silver halide photographic light-sensitive material.. Arai, Takeo  
(Konica Corp., Japan). Eur. Pat. Appl. EP 663611 A1 **19950719**,  
34 pp. DESIGNATED STATES: R: DE, FR, GB, IT, NL. (English). CODEN:  
EPXXDW. APPLICATION: EP 1994-119875 19941215. PRIORITY: JP 1993-318350  
19931217.

AB The photog. light-sensitive material comprises a support bearing on the same side thereof a Ag halide emulsion layer and optionally a hydrophilic colloid layer, and .gtoreq.1 of the Ag halide emulsion layer or the hydrophilic colloid layer contains a hydrazine deriv. in a form of dispersion of solid particles and .gtoreq.1 of the Ag halide emulsion layer or the hydrophilic colloid layer contains a nucleation accelerator represented by the following formula R1R2NR3 [R1, R2 and R3 are each independently a H atom, a (un)substituted alkyl group, an (un)substituted alkenyl group or a (un)substituted aryl group, provided that R1, R2 and R3 are not a H atom at the same time and 2 of R1, R2 and R3 may link to form



a ring]. The material can be used for high contrast graphic art.

IC ICM G03C001-06

CC **74-2** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 116822-18-5 138652-14-9 141677-68-1 153555-30-7 159254-97-4  
160681-91-4 162373-75-3 **163427-77-8** 165739-43-5  
168969-60-6

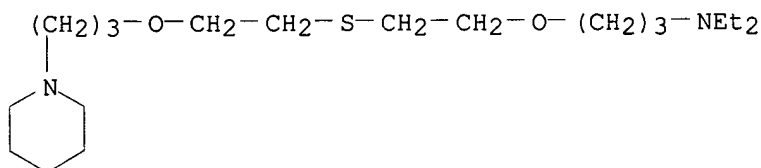
RL: MOA (Modifier or additive use); USES (Uses)  
(photog. emulsion for graphic arts)

IT **163427-77-8**

RL: MOA (Modifier or additive use); USES (Uses)  
(photog. emulsion for graphic arts)

RN 163427-77-8 HCA

CN 1-Propanamine, N,N-diethyl-3-[2-[[2-[3-(1-piperidinyl)propoxy]ethyl]thio]e  
thoxy]- (9CI) (CA INDEX NAME)



L78 ANSWER 11 OF 22 HCA COPYRIGHT 2003 ACS on STN

116:140152 Photopolymerization process for preparing printing plates and photoresists. Zertani, Rudolf; Mohr, Dieter; Matthiessen, Peter (Hoechst A.-G., Germany). Ger. Offen. DE 4013358 A1 **19911031**, 10 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1990-4013358 19900426.

AB Photopolymn. process for prepg. printing plates and photoresists. The title photopolymn. process involves irradiating a polymerizable layer contg. a polymer binder, a radical polymerizable ethylenically unsatd. compd. with .gtoreq.1 ethylenically unsatd. end group(s), and a radical polymn. initiator (e.g. metallocene compd.). The imaging material can be irradiated with a visible light (>400 nm) for hardening before, during, or after imagewise-irradn. (heat will release in short time).

IC ICM G03F007-20  
ICS G03F007-38; G03F007-032

CC **74-6** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 818-61-1D, urethane adduct 822-06-0 3040-44-6D, 1-Piperidineethanol, urethane adduct 19778-85-9 41137-60-4 123735-16-0 124197-96-2  
124219-80-3 **139212-09-2**

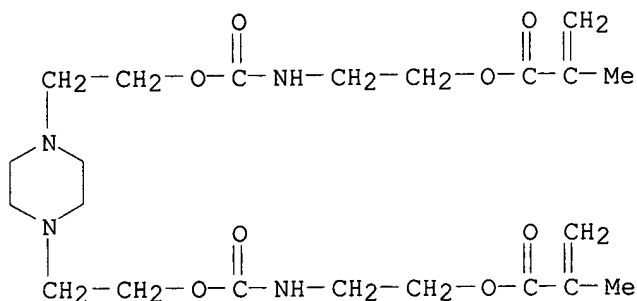
RL: USES (Uses)  
(photoresist contg.)

IT **139212-09-2**

RL: USES (Uses)  
(photoresist contg.)

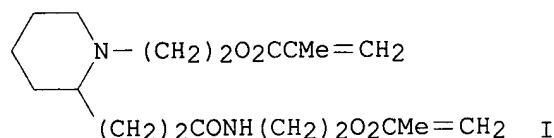
RN 139212-09-2 HCA

CN 2-Propenoic acid, 2-methyl-, 1,4-piperazinediylbis(2,1-ethanediyloxycarbonylimino-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



L78 ANSWER 13 OF 22 HCA COPYRIGHT 2003 ACS on STN  
 113:106473 Photopolymerizable mixtures. Zertani, Rudolf; Mohr, Dieter; Rode, Klaus (Hoechst A.-G., Germany). Ger. Offen. DE 3824903 A1  
**19900201**, 11 pp. (German). CODEN: GWXXBX. APPLICATION: DE  
 1988-3824903 19880722.

GI



AB Photopolymerizable mixts. for the prodn. of printing plates and photoresists having a high photosensitivity and improved storage stability are essentially composed of a polymer binder, an acrylic or alkacrylic acid ester of a polyhydric alc. with .gtoreq.1 urea group and .gtoreq.1 urethane group, a photoreducible dye, a radiation-cleavable trihalomethyl compd., and an acridine or phenazine compd. Thus, a printing plate prepd. from a photopolymerizable compn. contg. hexyl methacrylate-methacrylic acid-styrene copolymer, the monomer I, alc.-sol. eosin, 2,4-bis(trichloromethyl)-6-(4-styrylphenyl)-s-triazine, 9-phenylacridine, and propylene glycol mono-Me ether showed both a high sensitivity and a high storage stability.

IC ICM G03F007-031

ICS C08F002-50; C08F120-36; C08F120-20; G03C001-72

ICA G03F007-16; G03F007-20

CC **74-6** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 602-56-2, 9-Phenylacridine 17372-87-1, Eosin 58601-54-0 97802-84-1, 2,4-Bis(trichloromethyl)-6-(4-styrylphenyl)-s-triazine 128860-38-8 128860-39-9 **128860-40-2** 128860-41-3 128860-42-4 128860-43-5 128860-44-6 128881-32-3 **128881-33-4**

RL: USES (Uses)

(photopolymerizable compn. contg., for printing plate prepn.)

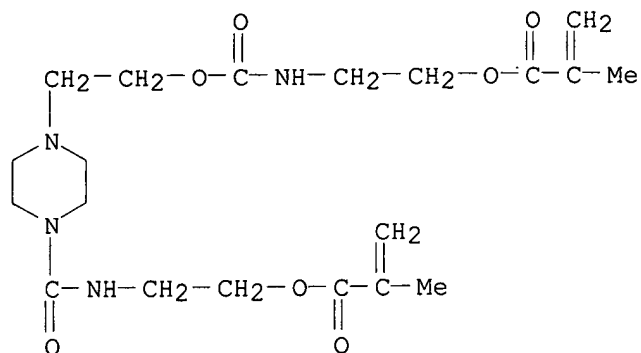
IT **128860-40-2 128881-33-4**

RL: USES (Uses)

(photopolymerizable compn. contg., for printing plate prepn.)

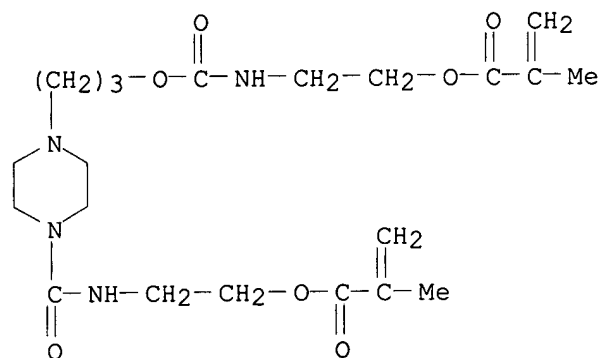
RN 128860-40-2 HCA

CN 2-Propenoic acid, 2-methyl-, 2-[[[4-[2-[[[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]amino]carbonyl]oxy]ethyl]-1-piperazinyl]carbonyl]amino]ethyl ester (9CI) (CA INDEX NAME)



RN 128881-33-4 HCA

CN 2-Propenoic acid, 2-methyl-, 2-[[[4-[[[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]amino]carbonyl]oxy]propyl]-1-piperazinyl]carbonyl]amino]ethyl ester (9CI) (CA INDEX NAME)



L78 ANSWER 15 OF 22 HCA COPYRIGHT 2003 ACS on STN

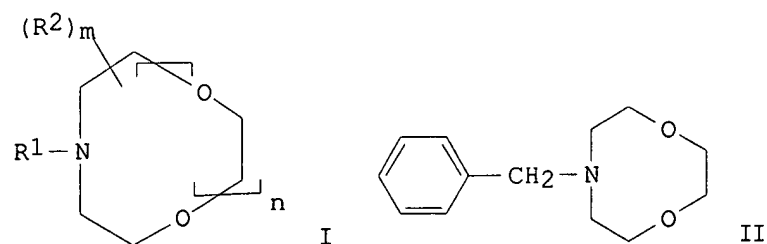
111:87290 Photofading prevention of organic colored material. Kaneko, Yutaka

(Konica Co., Japan). Jpn. Kokai Tokkyo Koho JP 63267944 A2

19881104 Showa, 15 pp. (Japanese). CODEN: JKXXAF. APPLICATION:

JP 1987-102923 19870424.

GI



AB The title method comprises mixing an org. colored material (e.g.,

colorant) and .gtoreq.1 I [R1 = H, alkyl, cycloalkyl, alkenyl, cycloalkenyl, alkynyl, aryl, heterocyclyl; R2 = substituent; m = 0-6; n = 1, 2]. The method is useful for color photog., fabric dyes, or inks. A soln. contg. II and a magenta dye was coated on a polyethylene-laminated photog. paper support.

IC ICM G03C007-26  
ICS C09B067-00

ICA C07D273-01; C07D521-00

CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 80649-19-0 84227-47-4 84761-08-0 93000-70-5 102069-58-9  
105400-05-3 120547-32-2 122066-02-8 122066-03-9 122066-04-0  
122066-05-1 122066-06-2 122066-07-3 122066-08-4 122066-09-5  
122066-10-8 122066-11-9 122066-12-0 122077-87-6 122077-88-7  
RL: USES (Uses)

(photofading preventing agent)

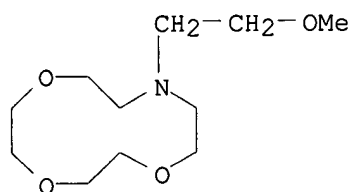
IT 80649-19-0

RL: USES (Uses)

(photofading preventing agent)

RN 80649-19-0 HCA

CN 1,4,7-Trioxa-10-azacyclododecane, 10-(2-methoxyethyl)- (9CI) (CA INDEX. NAME)



L78 ANSWER 17 OF 22 HCA COPYRIGHT 2003 ACS on STN

105:105677 High-contrast development of silver halide photographic material. Okutsu, Eiichi; Watase, Kazumi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 60218642 A2 19851101 Showa, 15 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1984-76163 19840416.

AB A method of developing an exposed Ag halide photog. material in the presence of a hydrazine deriv. comprises using a developer of pH 10.5-12.3 in which (1) a developing agent, (2) .gtoreq.0.25 mol/L of sulfite, and (3) a compd. of the formula RR1NZR2 (I: R, R1 = alkyl or R and R1 may be combined to form a ring; R2 = alkyl, aryl, heterocyclic ring; Z = alkylene; Z1 = CONH, OCONH, NHCONH, NHCO2, CO2, OCO, CO, NHCO, SO2NH, NHSO2, SO2, O) are incorporated. In spite of its relatively low pH, the developer enables high-contrast development aided by the hydrazine deriv. which works at pH .gtoreq.12 and has little Ag strain. Thus, 1-formyl-[2,4-[2-(2,4-di-tert-pentylphenoxy)butylamide]phenyl] hydrazide was added to a Ag(Br,Cl) emulsion prepd. in presence of a Rh salt (0.3 .mu. in av. size) and coated on a film support. By developing the film with a black-and-white developer with pH 11.4 and contg. I [R, R1 = Et; R2 = Ph; Z = (CH2)3; Z1 = -NHCONH-], a high-contrast image was obtained.

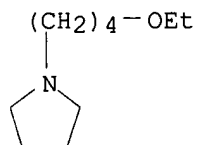
IC ICM G03C005-26  
ICS G03C001-06

CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

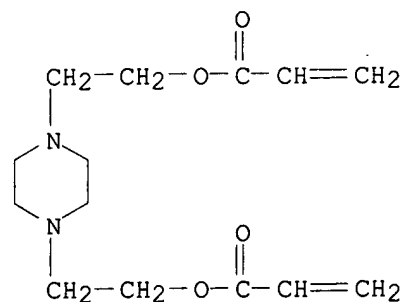
IT 2582-08-3 99759-00-9 104080-31-1 104080-32-2 104080-33-3  
104080-34-4 104080-35-5 104080-36-6  
RL: USES (Uses)

(high-contrast photog. development of silver halide materials in

presence of hydrazine deriv. and)  
 IT **104080-31-1**  
 RL: USES (Uses)  
 (high-contrast photog. development of silver halide materials in  
 presence of hydrazine deriv. and)  
 RN 104080-31-1 HCA  
 CN Pyrrolidine, 1-(4-ethoxybutyl)- (9CI) (CA INDEX NAME)



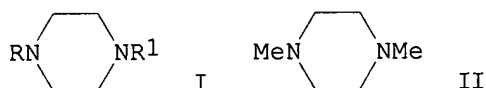
L78 ANSWER 19 OF 22 HCA COPYRIGHT 2003 ACS on STN  
 98:117140 Photopolymerizable resin compositions. (Teijin Ltd., Japan). Jpn.  
 Kokai Tokkyo Koho JP 57151639 A2 **19820918** Showa, 8 pp.  
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1981-37201 19810317.  
 AB Photopolymerizable resin compns. are described which contain (1) a ternary  
 amine compd. contg. .gtoreq.1 N-alkyl and/or alkylenediamino group(s) and  
 .gtoreq.2 (meth)acrylate groups, (2) a photoreducible dye, (3) unsatd.  
 monomers, and (4) a polymer binder. The compns. are esp. useful in the  
 Oster process. Thus, a compn. contg. MeN(CH<sub>2</sub>CH<sub>2</sub>O<sub>2</sub>CH:CH<sub>2</sub>)<sub>2</sub>,  
 pentaerythritol tetraacrylate, Rose Bengal, and poly(Me methacrylate) was  
 coated on an Al support to give a presensitized plate. The plate showed  
 good sensitivity and storage stability.  
 IC C08L033-04  
 CC **74-6** (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 37  
 IT 61-73-4 65-61-2 4986-89-4 9011-14-7 11121-48-5 15625-89-5  
 17372-87-1 18507-41-0 25067-61-2 25322-68-3 75831-75-3  
 84020-98-4 84138-79-4 84138-82-9 84924-28-7 84943-05-5  
 84943-06-6 84954-53-0 **84954-54-1** 84954-55-2 84954-56-3  
 84992-37-0 85026-04-6  
 RL: USES (Uses)  
 (photosensitive resin compns. contg., for presensitized printing  
 plates)  
 IT **84954-54-1**  
 RL: USES (Uses)  
 (photosensitive resin compns. contg., for presensitized printing  
 plates)  
 RN 84954-54-1 HCA  
 CN 2-Propenoic acid, 1,4-piperazinediyl-di-2,1-ethanediyl ester (9CI) (CA  
 INDEX NAME)



L78 ANSWER 20 OF 22 HCA COPYRIGHT 2003 ACS on STN

91:149462 Photothermographic photosensitive materials. Kato, Masahiro;  
Higuchi, Tetsuya (Oriental Photo Industrial Co., Ltd., Japan). Jpn. Kokai  
Tokkyo Koho JP 54051820 **19790424** Showa, 7 pp. (Japanese).  
CODEN: JKXXAF. APPLICATION: JP 1977-118447 19771001.

GI



AB Piperazine derivs. of the general formula I (R, R1 = alkyl, aryl, aralkyl with/without substituents) are added to photothermog. materials based on the redox reaction of org. Ag salts and reducing agents to improve their sensitivity. Thus, a paper support was coated with a compn. contg. Ag behenate 17, behenic acid 13, poly(vinyl butyral) 40 g, II 0.01 mol/mol Ag behenate, PhMe 350, and EtOH 350 mL, and subsequently coated with a compn. contg. 2,2'-methylenebis(6-tert-butyl-.alpha.-methylphenol) 50, phthalazinone 15, 3-ethyl-5-[(3-methyl-2-thiazolinyldiene)ethylidene]rhodanine (a sensitizer dye) 0.01, poly(vinyl butyral) 10 g, and EtOH 1000 mL to give a photothermog. paper. The photothermog. paper was sensitometrically exposed and developed at 120.degree. to give Dmax, fog, and relative sensitivity of 1.68, 0.26, and 3.5, resp., vs 1.50, 0.25, and 100, resp., for a II-free control.

IC G03C001-72

CC **74-3** (Radiation Chemistry, Photochemistry, and Photographic Processes)

IT 106-58-1 122-96-3 3367-47-3 7672-76-6 **14970-86-6**  
25115-78-0 71530-53-5 71530-54-6 71530-55-7 **71530-56-8**

RL: USES (Uses)

(photothermog. sensitizer)

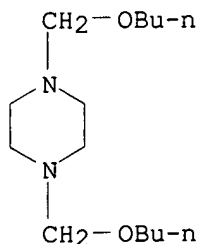
IT **14970-86-6 71530-56-8**

RL: USES (Uses)

(photothermog. sensitizer)

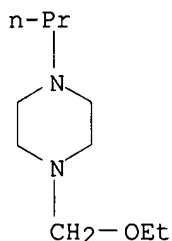
RN 14970-86-6 HCA

CN Piperazine, 1,4-bis(butoxymethyl)- (8CI, 9CI) (CA INDEX NAME)



RN 71530-56-8 HCA

CN Piperazine, 1-(ethoxymethyl)-4-propyl- (9CI) (CA INDEX NAME)



L78 ANSWER 21 OF 22 HCA COPYRIGHT 2003 ACS on STN

70:24606 Alkoxymethylamines used as gelatin hardeners. Reynolds, Delbert D.; Tinker, John F. (Eastman Kodak Co.). U.S. US 3408198 **19681029**, 4 pp. (English). CODEN: USXXAM. APPLICATION: US 1962-220031 19620828.

AB The gelatin hardeners used are ether-amines characterized in that each mol. thereof has an ROCH<sub>2</sub>N-R<sub>1</sub> group, R and R<sub>1</sub> each being alkyl or alkylene. These are polyfunctional alkoxymethylamine groups which are particularly useful within range of 1-5% based on wt. of gelatin. Resistance to swelling is increased and they are more resistant to H<sub>2</sub>O at elevated temps. One hardener is 5-(hydroxymethyl)-3,7-dioxo-1-azabicyclo[3.3.0] octane (I). For example, (A) 1 g. and (B) 5 g. of I were added to sep. 100-g. portions of a Ag(Br,I) photographic emulsion, and each portion was coated on a cellulose acetate support and dried, exposed on an Eastman Ib sensitometer, processed 5 min. in Kodak Developer DK-50, fixed, washed, and dried. Sensitometric results, swell properties, and m.p. are indicated as follows for A, B, and a control, resp.: Relative speed 293, 288, 304; .gamma. 0.90, 0.80, 1.10; fog 0.10, 0.10, 0.11; swell 200, 126, 573; and m.p. 200, 200, 89. The polymeric hardeners can be used in photographic emulsions in diffusion transfer processes as well as in color transfer processes.

NCL 096111000

CC **74** (Radiation Chemistry, Photochemistry, and Photographic Processes)

IT 6542-37-6 **14970-86-6** 14970-90-2 21412-93-1 28501-95-3  
28501-96-4 28723-54-8 28723-55-9 28723-56-0 28723-57-1  
28723-58-2 28723-59-3 28723-60-6

RL: USES (Uses)

(photographic hardening agent)

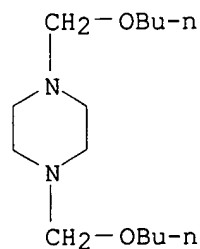
IT **14970-86-6**

RL: USES (Uses)

(photographic hardening agent)

RN 14970-86-6 HCA

CN Piperazine, 1,4-bis(butoxymethyl)- (8CI, 9CI) (CA INDEX NAME)



L78 ANSWER 22 OF 22 HCA COPYRIGHT 2003 ACS on STN

68:25426 New polymers with oxymethylamine groups. Reynolds, Delbert Daniel; Perry, Ernest J. (Eastman Kodak Co.). U.S. US 1472741 **19670310**, 11 pp. (English). CODEN: USXXAM. PRIORITY: US 19650415.

AB Synthetic polymers which are useful as peptizers in Ag halide photographic emulsions, were prepd. by treating a polymer contg. free and reactive OH groups with an alkoxymethylamine and, optionally, with a quaternizing agent, to give a quaternary polymer salt. Thus, 0.25 mole N,N-dialkylethoxymethylamine was added to 0.15 mole poly(vinyl alc.) in 300 ml. dioxane, and the mixt. was refluxed, filtered, mixed with 60 g. p-MeC6H4SO3Me (I), stirred 18 hrs. in vacuo, and dild. with MeOH. Treatment of this soln. with ether gave a white quaternary polymer. Similar polymers were prepd. by using amylose or cellulose acetate as the polymer and other amines and quaternizing agents. Stable neutral and NH3-type Ag halide emulsions were prepd. by using these polymers. Thus, 20 ml. of an aq. soln. contg. 3.82 g. AgNO3 was added in 20 min. to an aq. soln. contg. 3.275 g. KBr, 0.1 g. KI, and 1 g. of a quaternary polymer prepd. as above from 22 g. of a vinyl alc.-vinyl acetate copolymer, 87 g. N-(isobutoxymethyl)morpholine, and 100 g. I. The mixt. was heated and stirred 30 min. at 70.degree. to give a stable emulsion contg. octahedral grains with an av. size of 0.85 .mu. after 40 min. ripening and 0.87 after 60 min. These emulsions develop more rapidly than the usual photographic emulsions and give uniform black Ag particles.

IC C08F; G03C

CC **74** (Radiation Chemistry, Photochemistry, and Photographic Processes)

IT 18811-60-4 **18811-62-6** **18811-63-7**

RL: USES (Uses)

(reaction product with vinyl acetate-vinyl alc. polymers, quaternized, photographic emulsion peptizer)

IT **7309-48-0**

RL: USES (Uses)

(reaction products with amylose and vinyl acetate-vinyl alc. polymers, quaternized, photographic emulsion peptizers)

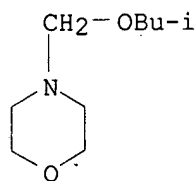
IT **18811-62-6** **18811-63-7**

RL: USES (Uses)

(reaction product with vinyl acetate-vinyl alc. polymers, quaternized, photographic emulsion peptizer)

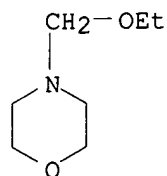
RN 18811-62-6 HCA

CN Morpholine, 4-[(2-methylpropoxy)methyl]- (9CI) (CA INDEX NAME)



RN 18811-63-7 HCA

CN Morpholine, 4-(ethoxymethyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)



IT **7309-48-0**

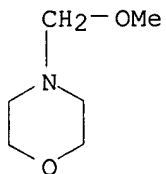


RL: USES (Uses)

(reaction products with amylose and vinyl acetate-vinyl alc. polymers,  
quaternized, photographic emulsion peptizers)

RN 7309-48-0 HCA

CN Morpholine, 4-(methoxymethyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



=> d his

(FILE 'HOME' ENTERED AT 16:07:04 ON 21 AUG 2003)

FILE 'LREGISTRY' ENTERED AT 16:07:14 ON 21 AUG 2003  
ACTIVATE DELETE/L

L1 STR  
L2 STR L1

FILE 'REGISTRY' ENTERED AT 16:09:15 ON 21 AUG 2003

L3 SCR 1608 AND 1838 AND 1210 AND 1707  
L4 SCR 1839 OR 2016 OR 2026 OR 1918 OR 1929 OR 2043 OR 1267 OR 170  
L5 1 S L1 AND L3 NOT L4

FILE 'LREGISTRY' ENTERED AT 16:11:17 ON 21 AUG 2003

FILE 'REGISTRY' ENTERED AT 16:12:32 ON 21 AUG 2003  
L6 50 S L2 AND L3 NOT L4  
L7 1038 S L2 AND L3 NOT L4 FULL  
SAVE L7 LEE808/A

FILE 'HCA' ENTERED AT 16:14:36 ON 21 AUG 2003

L8 951 S L7  
L9 937 S L8 AND 1907-2001/PY,PRY  
L10 72841 S RESIST# OR PHOTORESIST? OR PHOTO(W)RESIST?  
L11 15 S L9 AND L10  
E US20020098443/PN  
L12 1 S E3  
L13 15 S L12 OR L11  
L14 1 S L13 AND L12  
L15 14 S L13 NOT L14

FILE 'LREGISTRY' ENTERED AT 16:20:42 ON 21 AUG 2003

FILE 'HCA' ENTERED AT 16:21:13 ON 21 AUG 2003

L16 352 S L7/P  
L17 101 S L7/D  
L18 836 S L9 NOT L17  
L19 521 S L18 NOT L16  
L20 3 S L19 AND L10  
L21 17388 S PHOTOLITH? OR PHOTO(W)LITH?  
L22 0 S L19 AND L21  
L23 17231 S PHOTOLITH?  
L24 0 S L19 AND L23  
L25 408720 S 74/SX,SC  
L26 24 S L19 AND L25  
L27 435011 S ?LITH?  
L28 25 S L19 AND L27  
L29 347427 S MORPHOL?  
L30 224 S L19 AND L29  
L31 227731 S 27/SX,SC  
L32 272457 S 28/SX,SC  
L33 32074 S MORPHOLINE?  
L34 180 S L19 AND L33  
L35 358 S L19 NOT (L31 OR L32)

FILE 'LCA' ENTERED AT 16:36:34 ON 21 AUG 2003

L36 9 S ACID(2N)GENERAT?

L37 11 S ACID#####(2N)GENERAT?

FILE 'HCA' ENTERED AT 16:39:43 ON 21 AUG 2003

L38 67279 S AMINE?/TI  
L39 0 S L19 AND L37  
L40 69 S L7(2N)MORPHOLINE?  
L41 223 S L19(2N)MORPHOLIN?  
L42 223 S L19(L)MORPHOLIN?

FILE 'REGISTRY' ENTERED AT 16:43:53 ON 21 AUG 2003

L43 142519 S 8/SZS  
L44 1 S L7 AND L43  
L45 1075381 S 3/SZS  
L46 61 S L7 AND L45  
L47 704407 S 4/SZS  
L48 6 S L7 AND L47

FILE 'HCA' ENTERED AT 16:45:57 ON 21 AUG 2003

L49 1 S L44  
L50 123 S L46  
L51 5 S L48  
L52 6 S L49 OR L51  
L53 6 S L52 AND 1907-2001/PY,PRY  
L54 123 S L50 AND 1907-2001/PY,PRY  
L55 129 S L44 OR L46 OR L51  
L56 0 S L44/P  
L57 29 S L46/P  
L58 2 S L48/P  
L59 0 S L44/D  
L60 59 S L46/D  
L61 1 S L48/D  
L62 51 S L50 NOT (L57 OR L60)  
L63 2 S L51 NOT (L58 OR L61)  
L64 52 S L61 OR L62  
L65 3 S L61 OR L63  
L66 0 S L20 NOT (L14 OR L15)  
L67 3 S L65 NOT (L14 OR L15)  
L68 51 S L62 NOT (L14 OR L15 OR L65)

FILE 'LCA' ENTERED AT 16:54:50 ON 21 AUG 2003

FILE 'REGISTRY' ENTERED AT 16:56:09 ON 21 AUG 2003

L69 1 S L46 AND 6498-81-3  
L70 60 S L46 NOT L69

FILE 'HCA' ENTERED AT 16:56:30 ON 21 AUG 2003

L71 71 S L69  
L72 61 S L70  
L73 9 S L71 AND L72  
L74 5 S L68 AND L73  
L75 35 S L72 AND L68  
L76 469 S L19 NOT (L57 OR L60 OR L58 OR L61 OR L62 OR L65 OR L69 OR L72)  
L77 469 S L76 NOT L71  
L78 22 S L77 AND L25  
L79 447 S L77 NOT L78

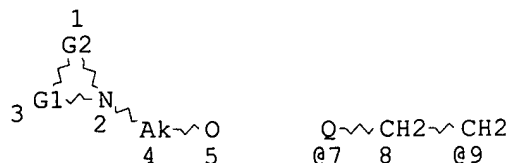
FILE 'REGISTRY' ENTERED AT 17:00:59 ON 21 AUG 2003

FILE 'HCA' ENTERED AT 17:01:31 ON 21 AUG 2003

L80 88 S L14 OR L15 OR L67 OR L74 OR L75 OR L62 OR L78

SAVE L80 LEE808ANSW/A

=> d que stat L7  
L2 STR



REP G1=(1-4) CH2  
REP G2=(0-5) 7-3 9-2  
NODE ATTRIBUTES:  
CONNECT IS E2 RC AT 4  
CONNECT IS E2 RC AT 5  
DEFAULT MLEVEL IS ATOM  
GGCAT IS SAT AT 4  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE  
L3 SCR 1608 AND 1838 AND 1210 AND 1707  
L4 SCR 1839 OR 2016 OR 2026 OR 1918 OR 1929 OR 2043 OR 1267 O  
R 1700 OR 1304  
L7 1038 SEA FILE=REGISTRY SSS FUL L2 AND L3 NOT L4

100.0% PROCESSED 15756 ITERATIONS 1038 ANSWERS  
SEARCH TIME: 00.00.01

|  |            |         |
|--|------------|---------|
| => d cost                                  |            |         |
| COST IN U.S. DOLLARS                       | SINCE FILE | TOTAL   |
|  | ENTRY      | SESSION |
| CONNECT CHARGES                            | 16.72      | 158.41  |
| NETWORK CHARGES                            | 0.48       | 5.88    |
| SEARCH CHARGES                             | 0.00       | 160.41  |
| DISPLAY CHARGES                            | 207.45     | 214.08  |
|  | -----      | -----   |
| FULL ESTIMATED COST                        | 224.65     | 538.78  |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE | TOTAL   |
|  | ENTRY      | SESSION |
| CA SUBSCRIBER PRICE                        | -27.90     | -28.52  |

IN FILE 'HCA' AT 17:06:09 ON 21 AUG 2003

L37 30 S L30 AND L28 AND L21 NOT L35

=> d que stat L37

L21 SCR 1607  
L28 SCR 1898  
L30 STR

Hy—C—G1—O  
1 3 4 5

C @9

17  
O  
||  
C  
@13

VAR G1=9/13

NODE ATTRIBUTES:

CONNECT IS X2 RC AT 1  
DEFAULT MLEVEL IS ATOM  
GGCAT IS MCY AT 1  
DEFAULT ECLEVEL IS LIMITED  
ECOUNT IS E1 N AT 1

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 7

STEREO ATTRIBUTES: NONE

L35 SCR 1918 AND 2043

L37 30 SEA FILE=REGISTRY SSS SAM L30 AND L28 AND L21 NOT L35

23.1% PROCESSED 1000 ITERATIONS  
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)  
SEARCH TIME: 00.00.01

30 ANSWERS

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*

PROJECTED ITERATIONS: 82753 TO 90647  
PROJECTED ANSWERS: 1917 TO 3285